FIG 1. A

FIG 1. B

FIG 1. C

$$g(x) \quad c(n)\sqrt{\frac{2}{L}} \cos \frac{(x \quad 0.5)n\Sigma}{L}$$

where.

$$c(n) \quad \frac{1}{\sqrt{2}} \text{ for } n = 0$$

and.

$$c(n) = 1 \text{ for all } n \zeta 0$$

FIG. 1D

FIG. 1E
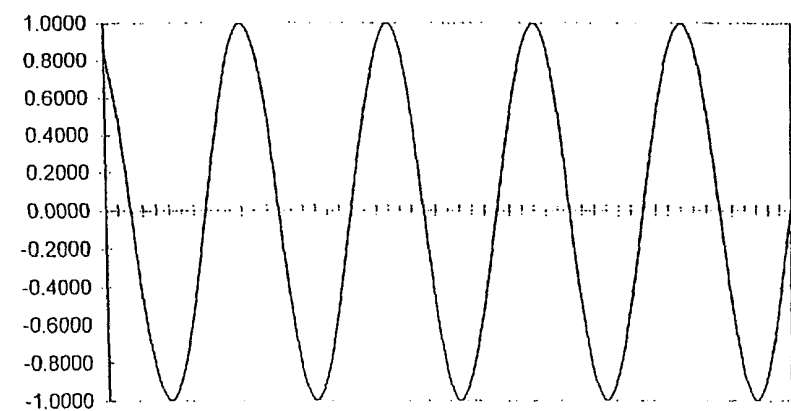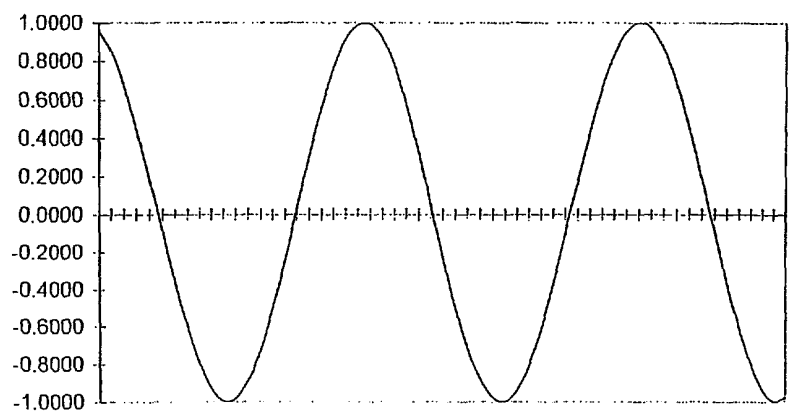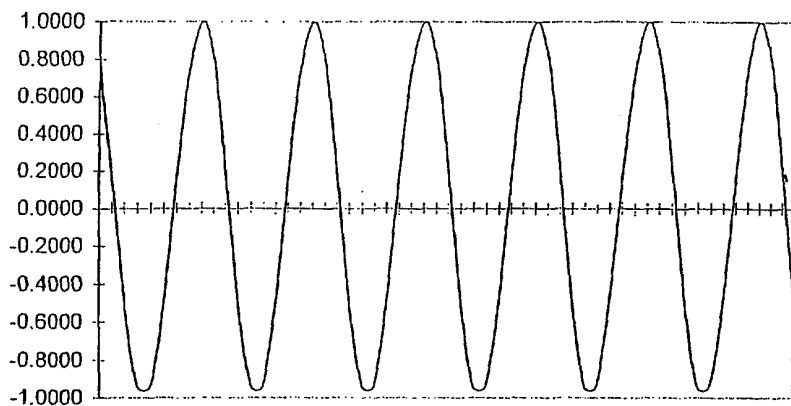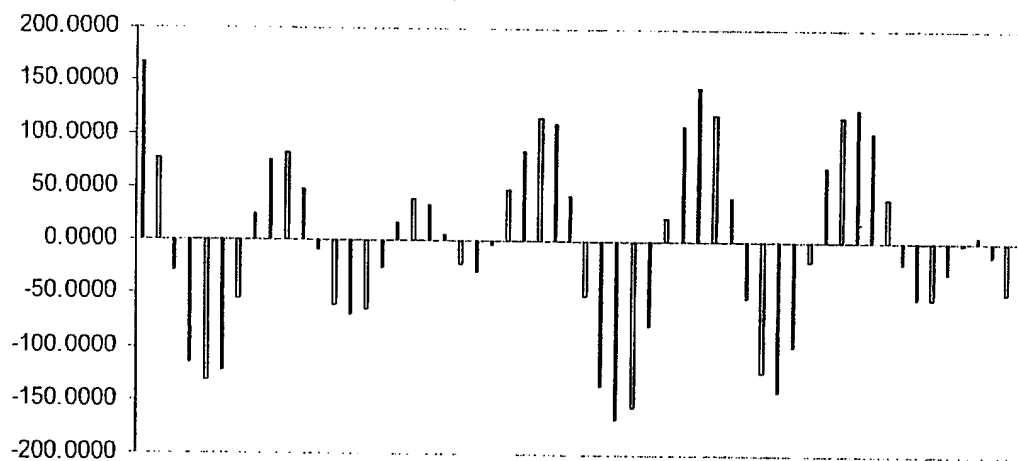
FIG 1. F
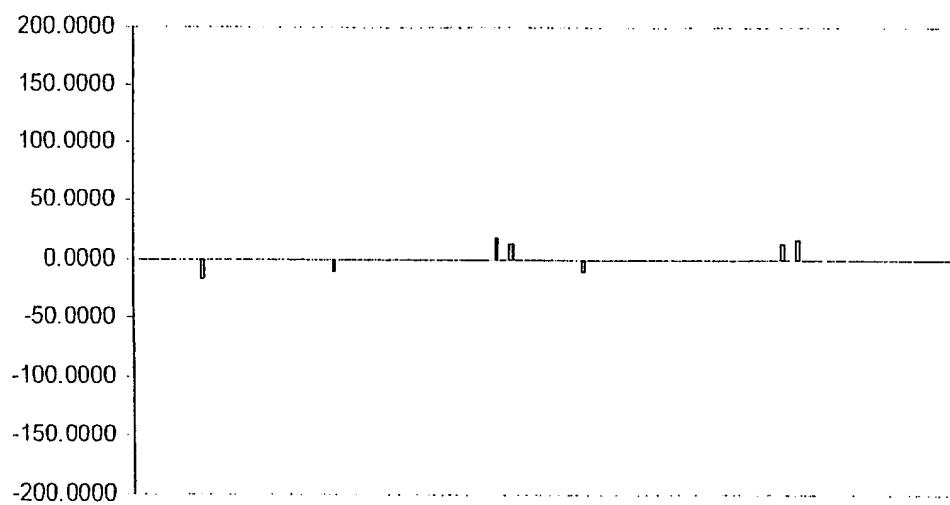
FIG 1. G
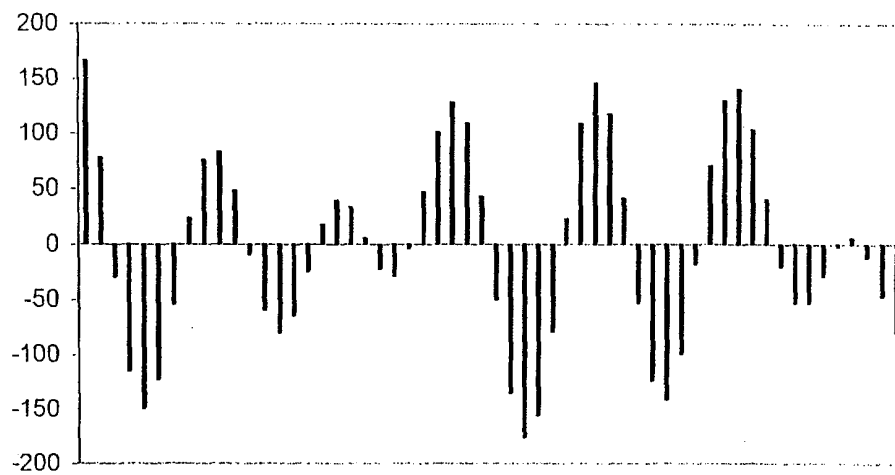
FIG 1. H

signal

Position of signal

FIG. 2A

signal

Position of signal
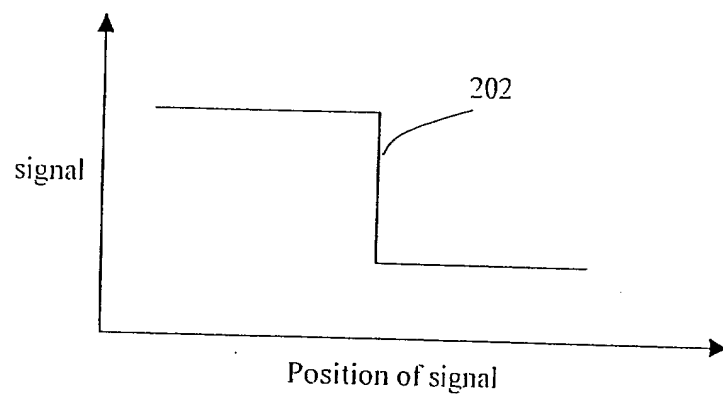
FIG. 2B
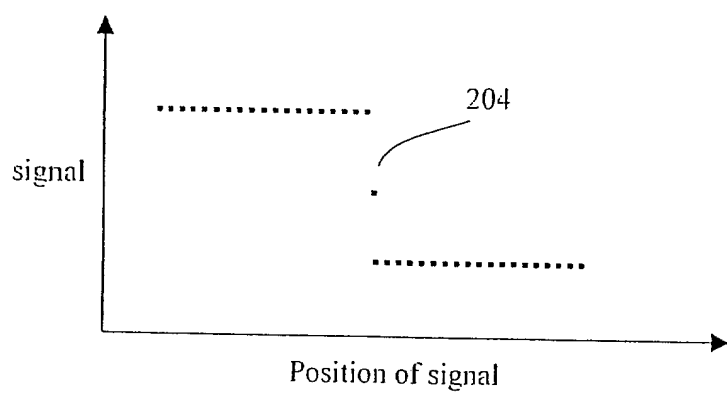
FIG.2C
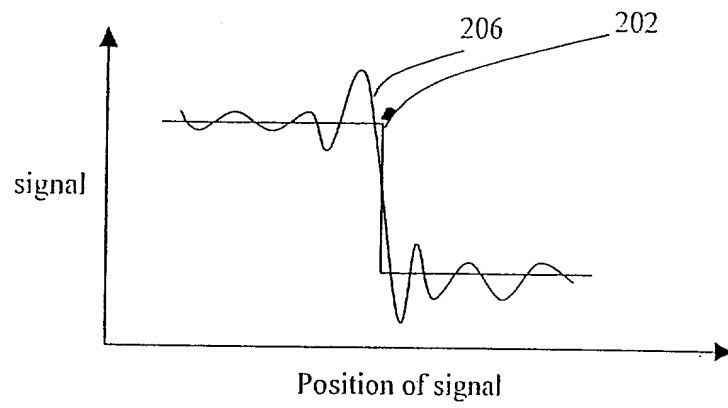
FIG.2D
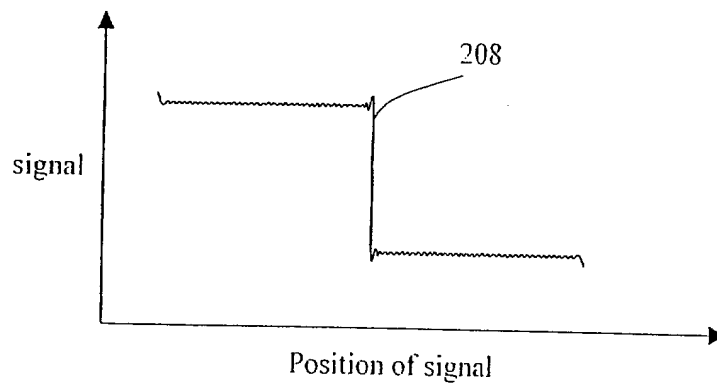
signal
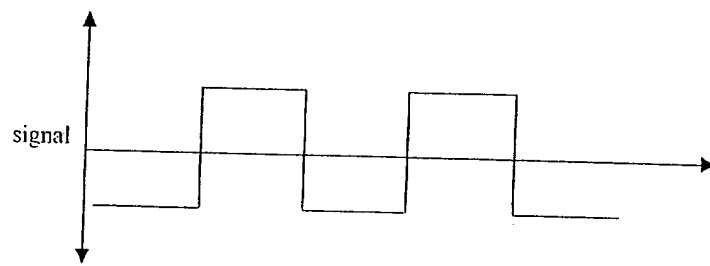
Position of signal
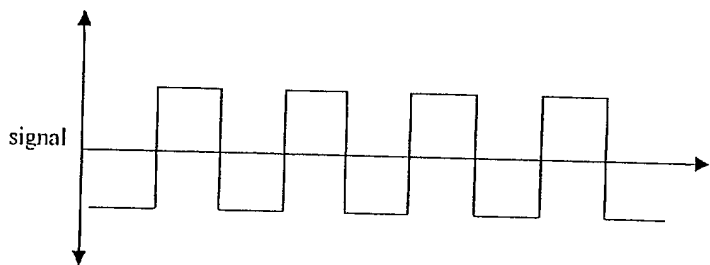
signal

Position of signal
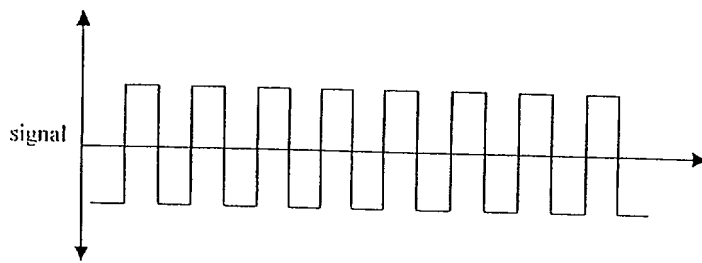
signal

Position of signal

FIG.3

FIG.4A
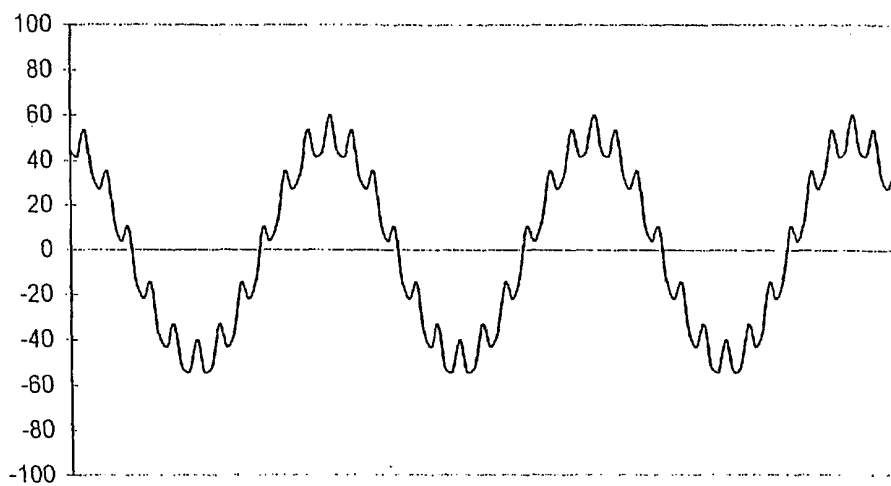

F1(x)

FIG.4B

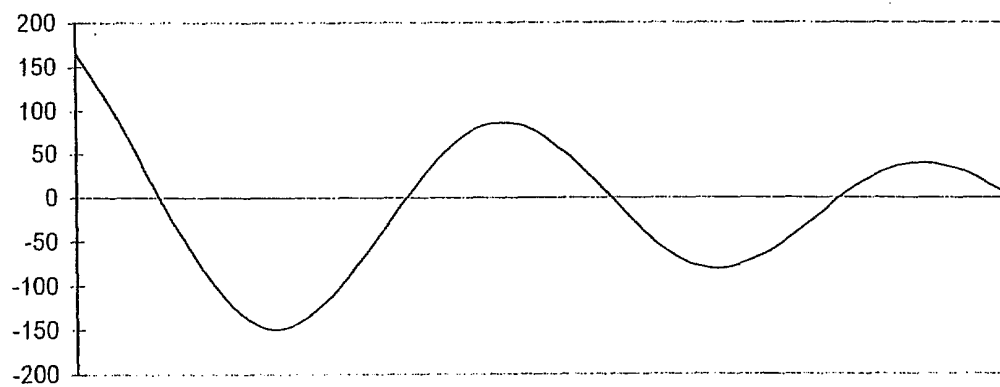FIG.4C

FIG.5A

FIG.5B

100

50

0

-50

-100

-150

| 73 | -103 | -113 | 17 | 73 | -8 | -71 | -24 | 32 | 19 |

| 1/4 | 1/2 | 1/4 |

| 1/4 | 1/2 | 1/4 |

| 1/4 | 1/2 | 1/4 | . . . . . . |

| -61 | -2 | -4 | -22 | 26 |

FIG.5C

	-61	-2	-4	-22	26

FIG.5D

78.3	81.5	79.9	73.7	64.1	52.5	40.5
81.5	88.2	90.0	86.5	78.3	66.7	53.5
79.9	90.0	95.6	95.6	90.0	79.9	66.7
73.7	86.5	95.6	99.5	97.5	90.0	78.3
64.1	78.3	90.0	97.5	99.5	95.6	86.5
52.5	66.7	79.9	90.0	95.6	95.6	90.0
40.5	53.5	66.7	78.3	86.5	90.0	88.2
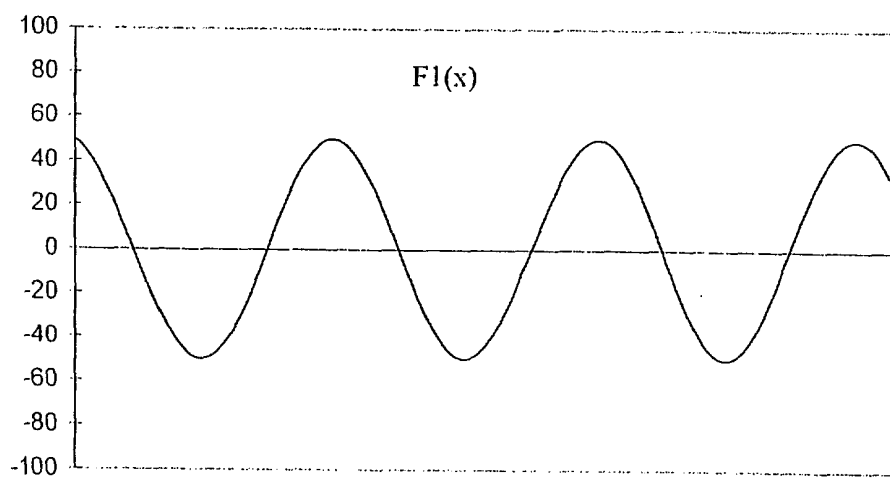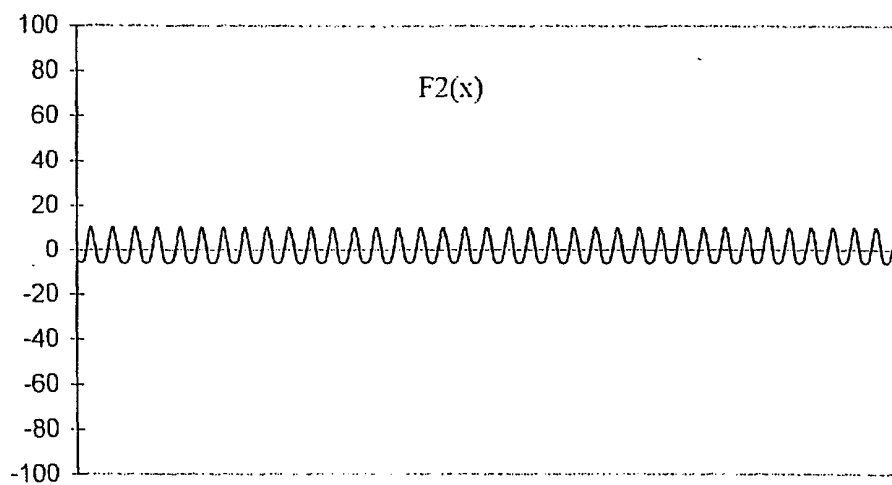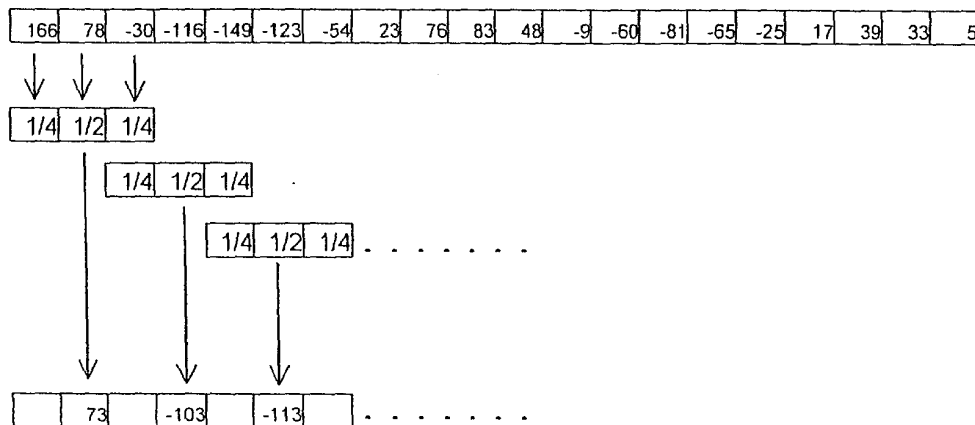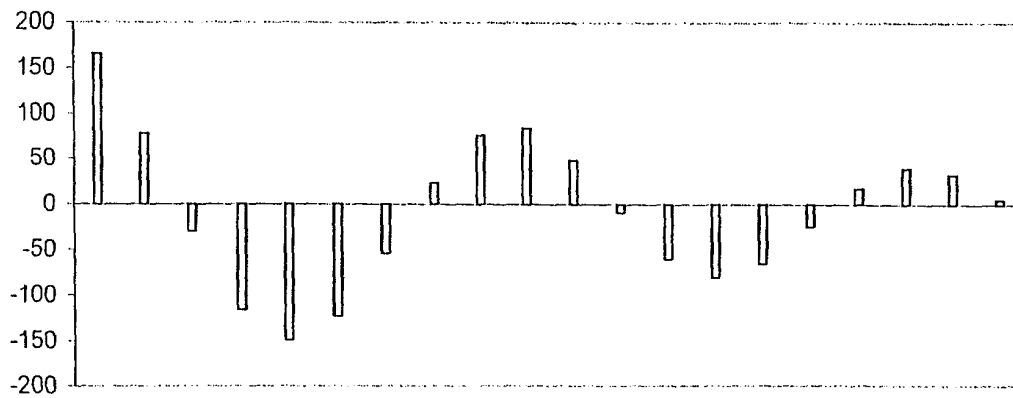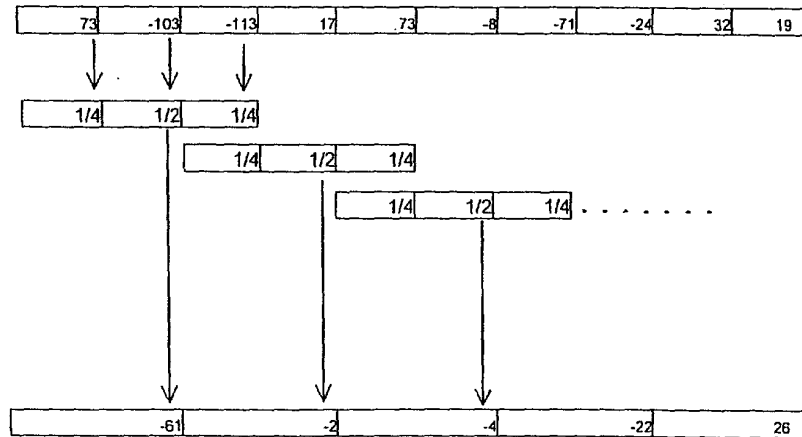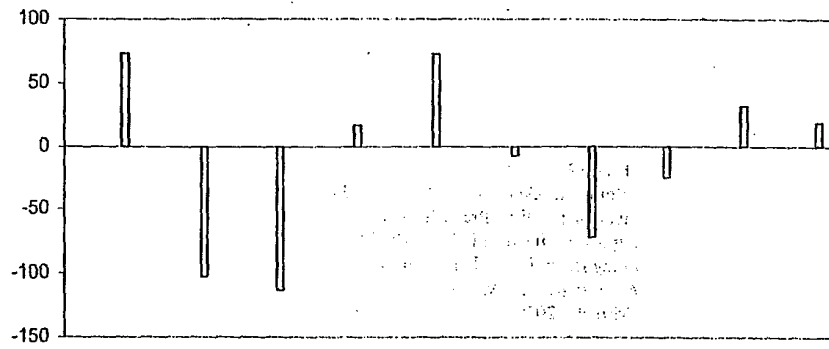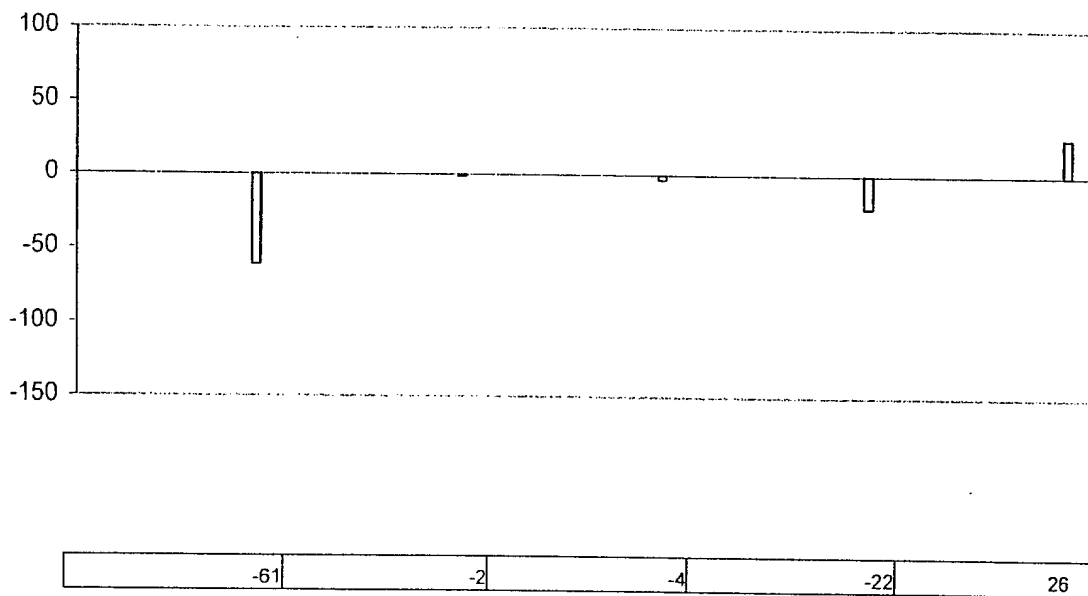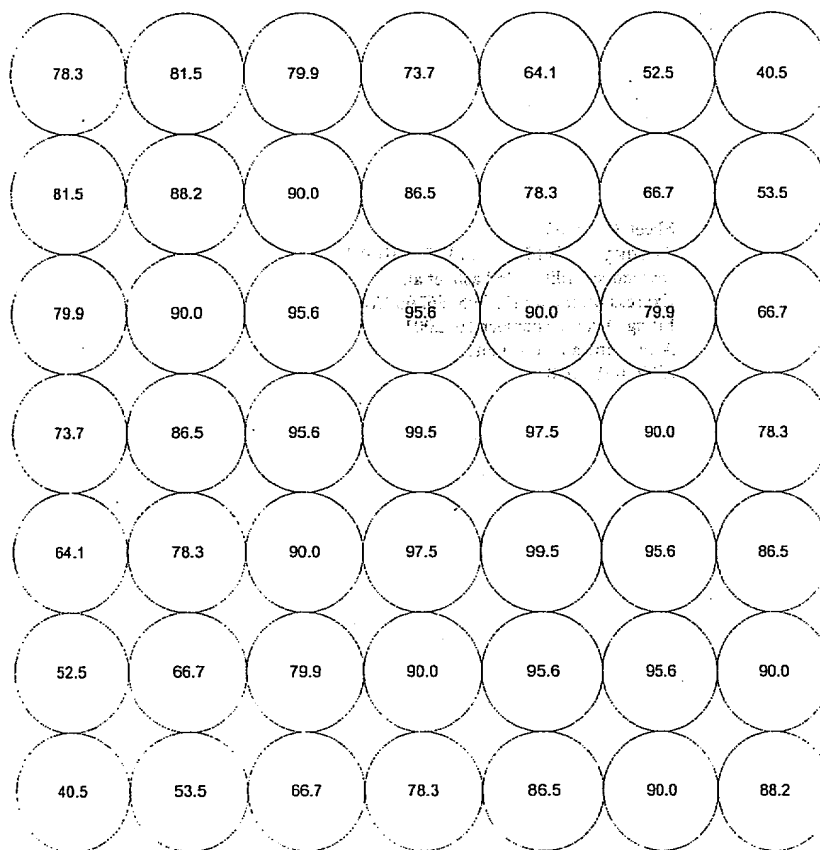
FIG. 6A
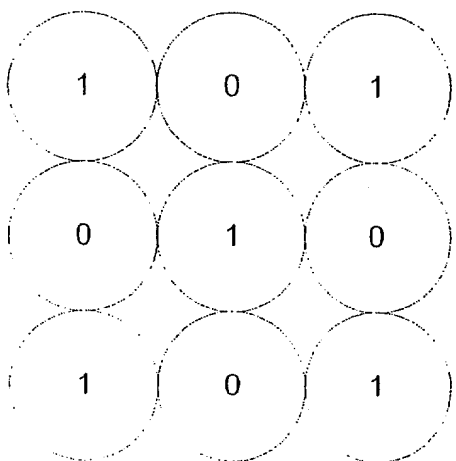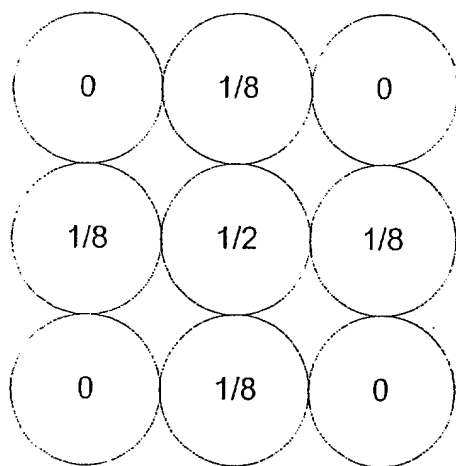
FIG. 6B
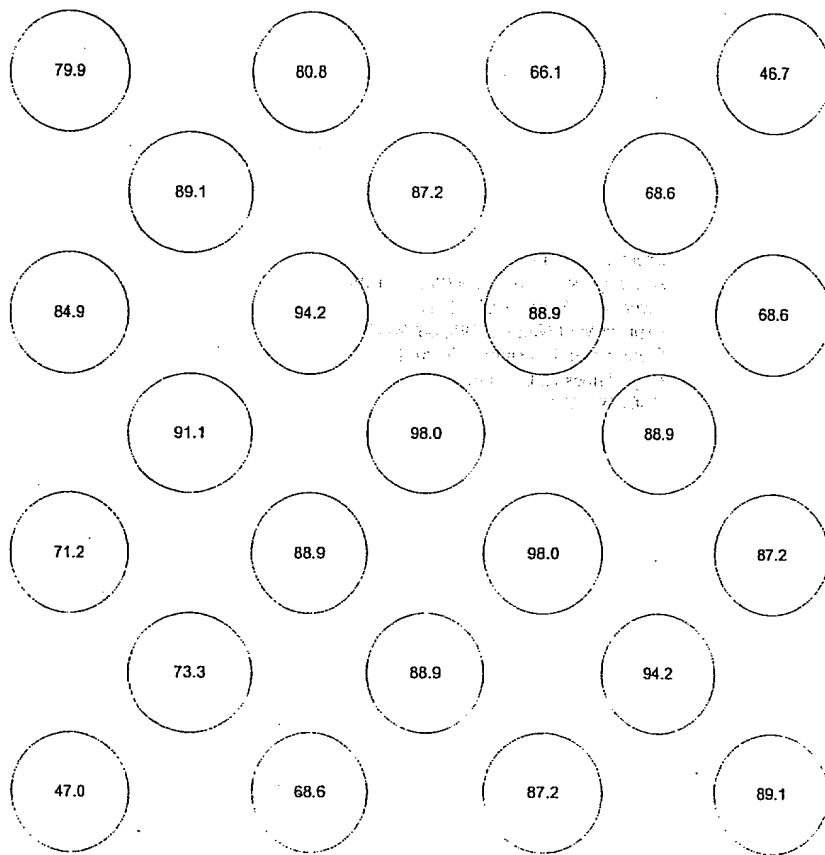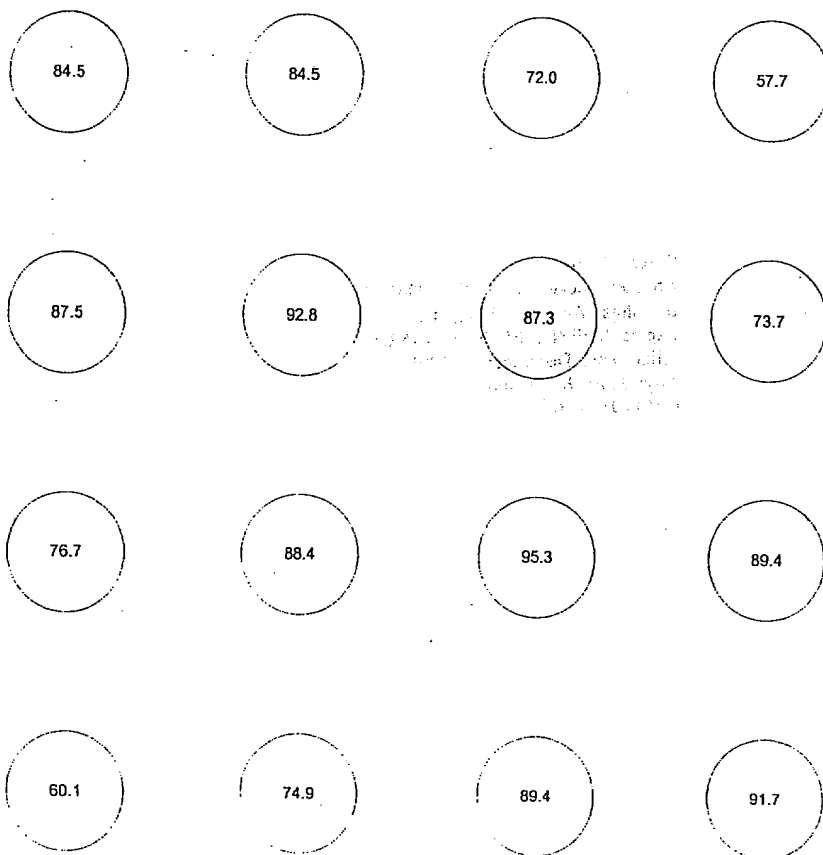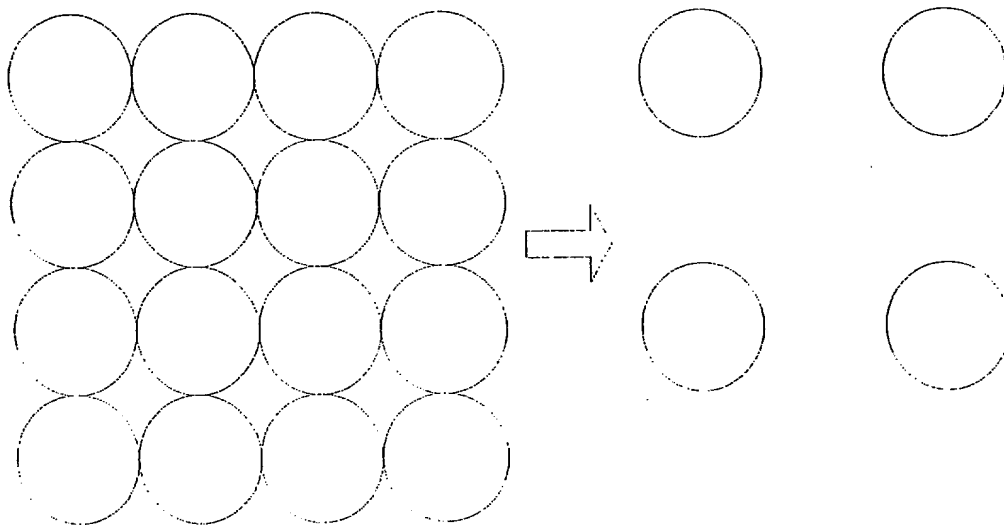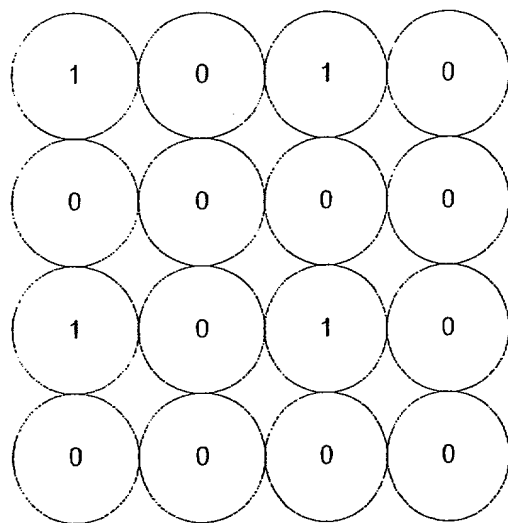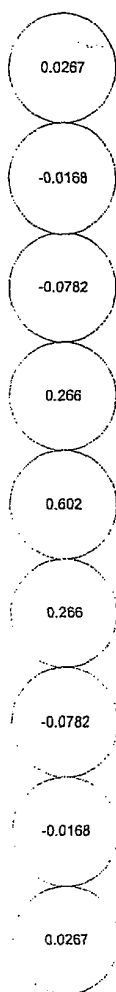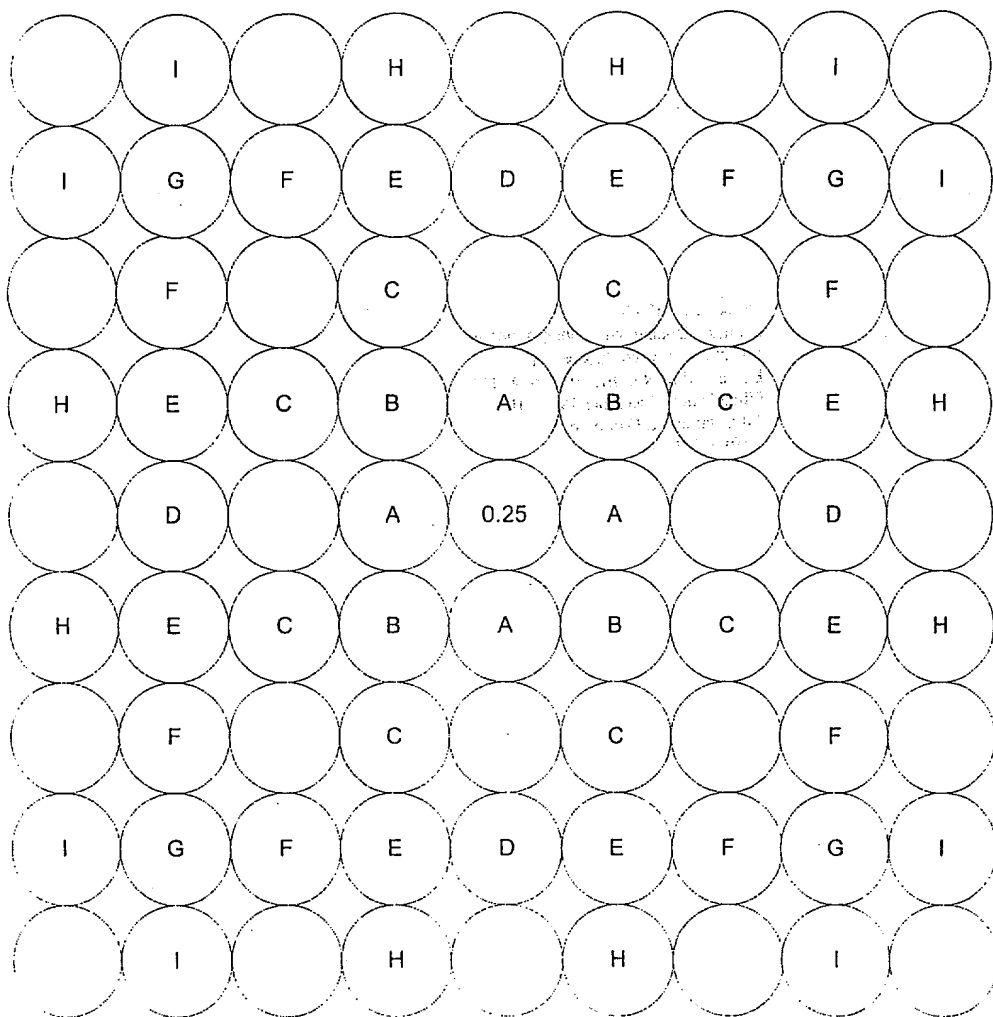
FIG. 6C

FIG. 6D

FIG. 6E

FIG. 6F

FIG. 6G

A = 0.1609
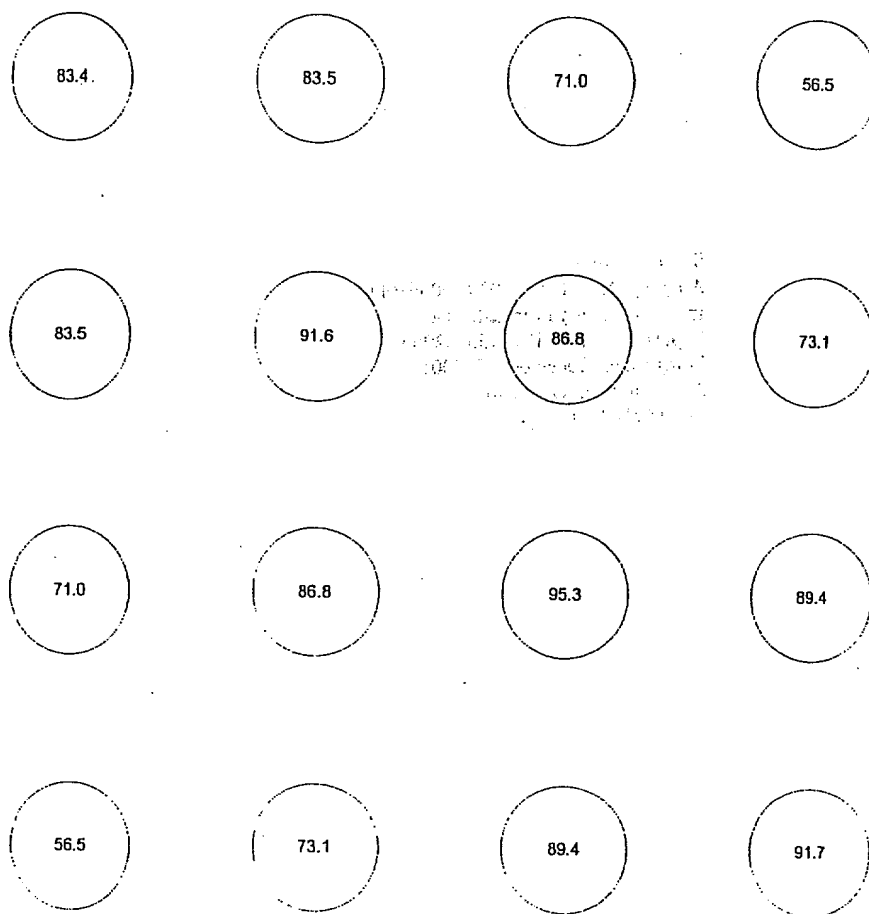B = 0.0712
C = - 0.0208
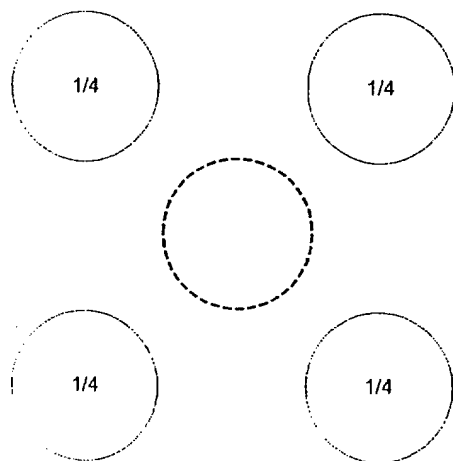D = - 0.0101
E = - 0.0045
F = 0.0013
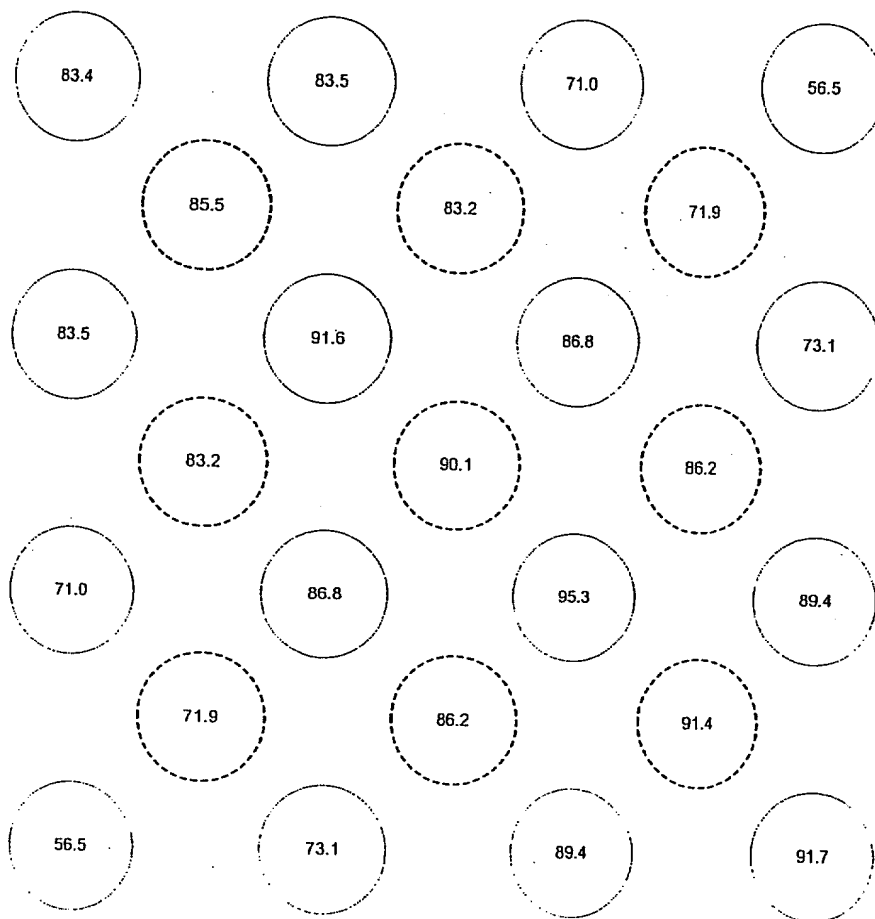G = 0.00028
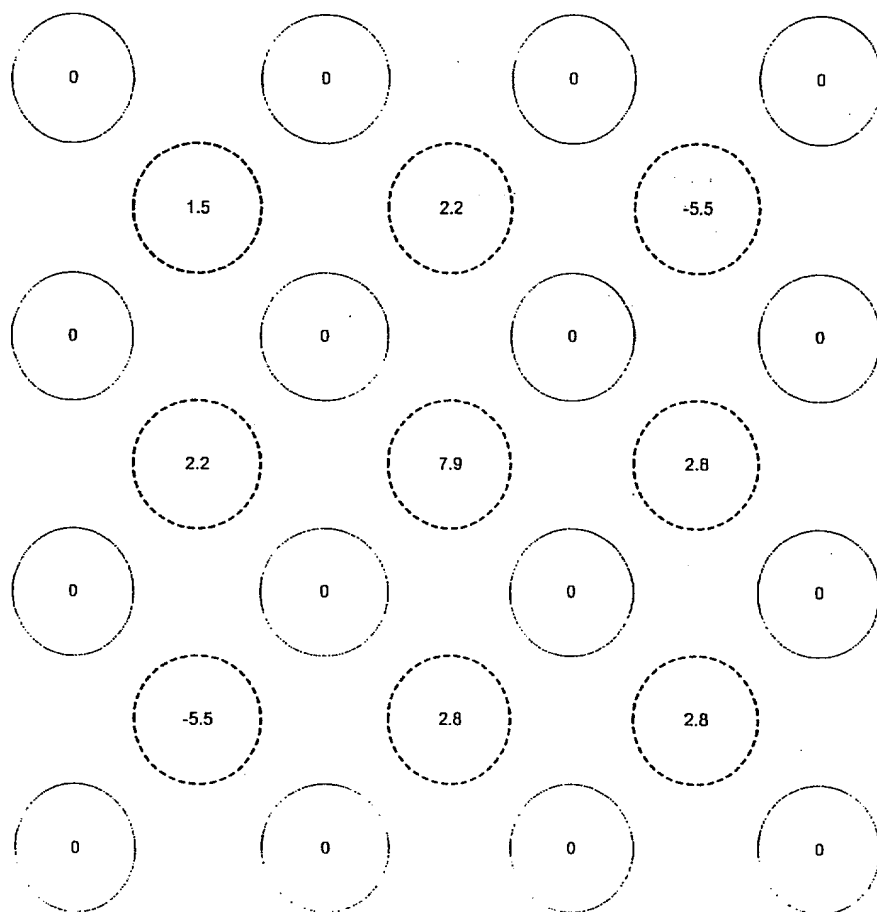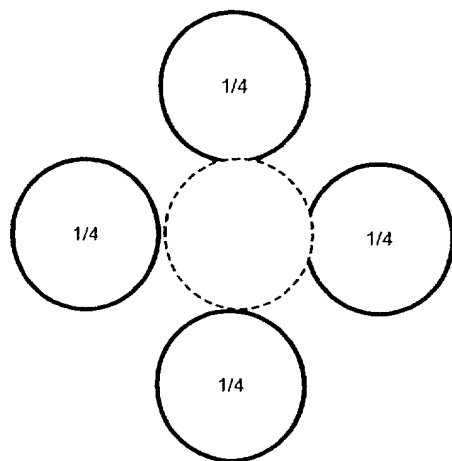H = 0.00713
I = - 0.00045

FIG. 7A

FIG. 7 B

FIG. 7C

FIG. 7D

FIG. 7E

FIG. 7F

0	-2.7	0	-5.5	0	-14.0	0
-2.7	1.5	4.1	2.2	0	-5.5	-13.7
0	4.1	0	7.7	0	0.4	0
-5.5	2.2	7.7	7.9	7.9	2.8	-4.6
0	0	0	7.9	0	5.0	0
-14.0	-5.5	0.4	2.8	5.0	2.8	-0.8
0	-13.7	0	-4.6	0	-0.8	0

FIG. 7G

N/4

M/4

N/2

M/2

N

M
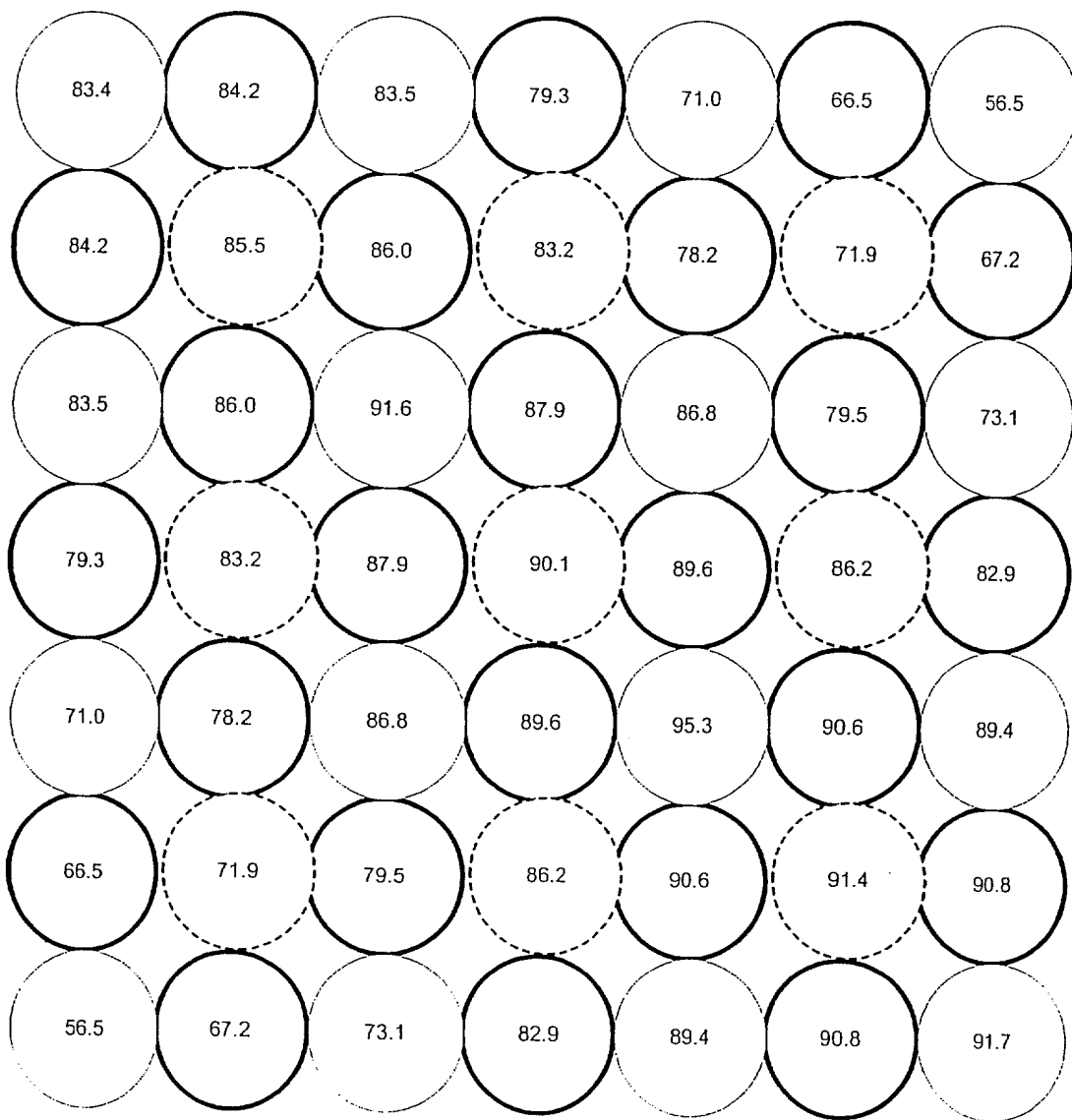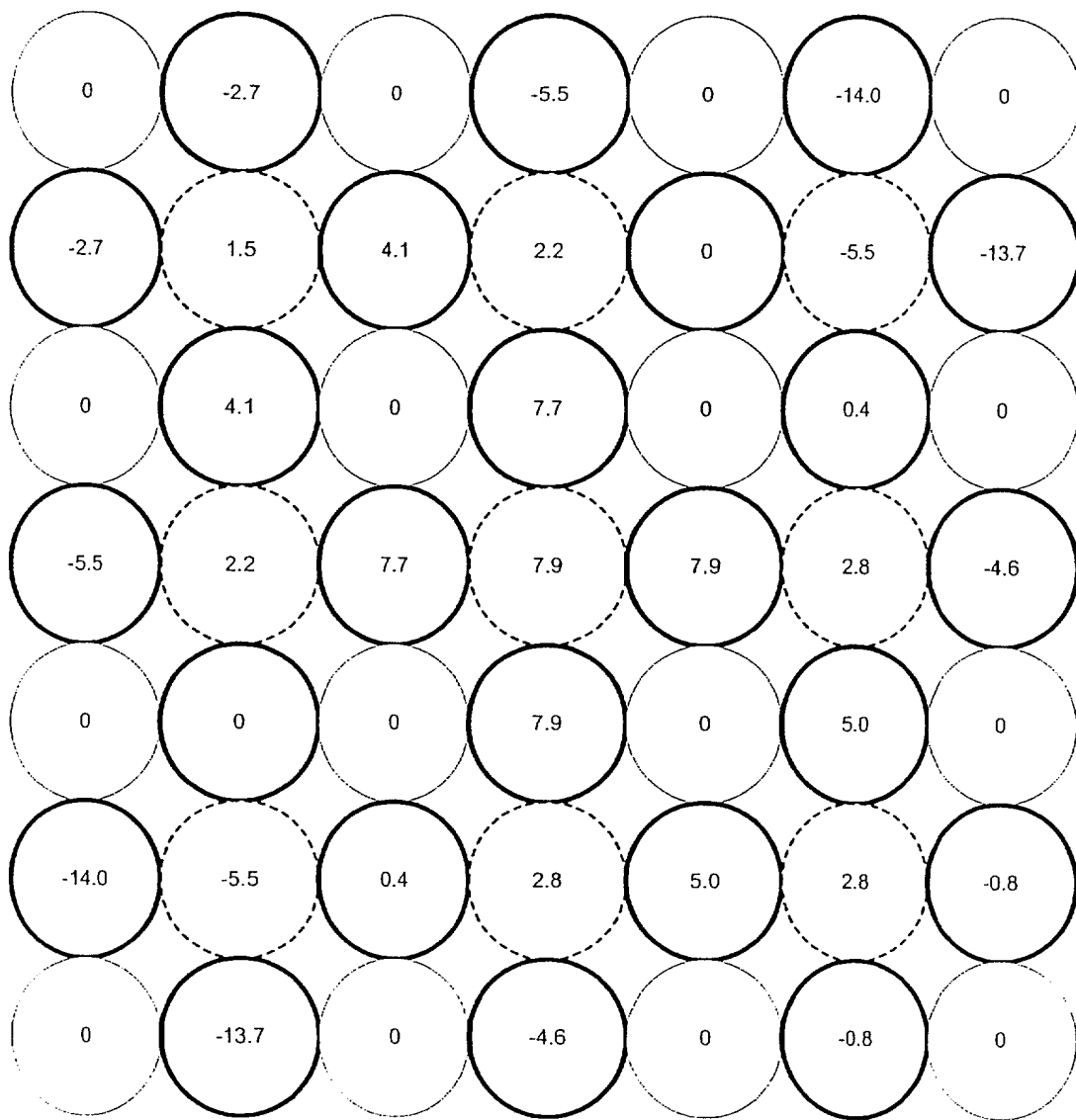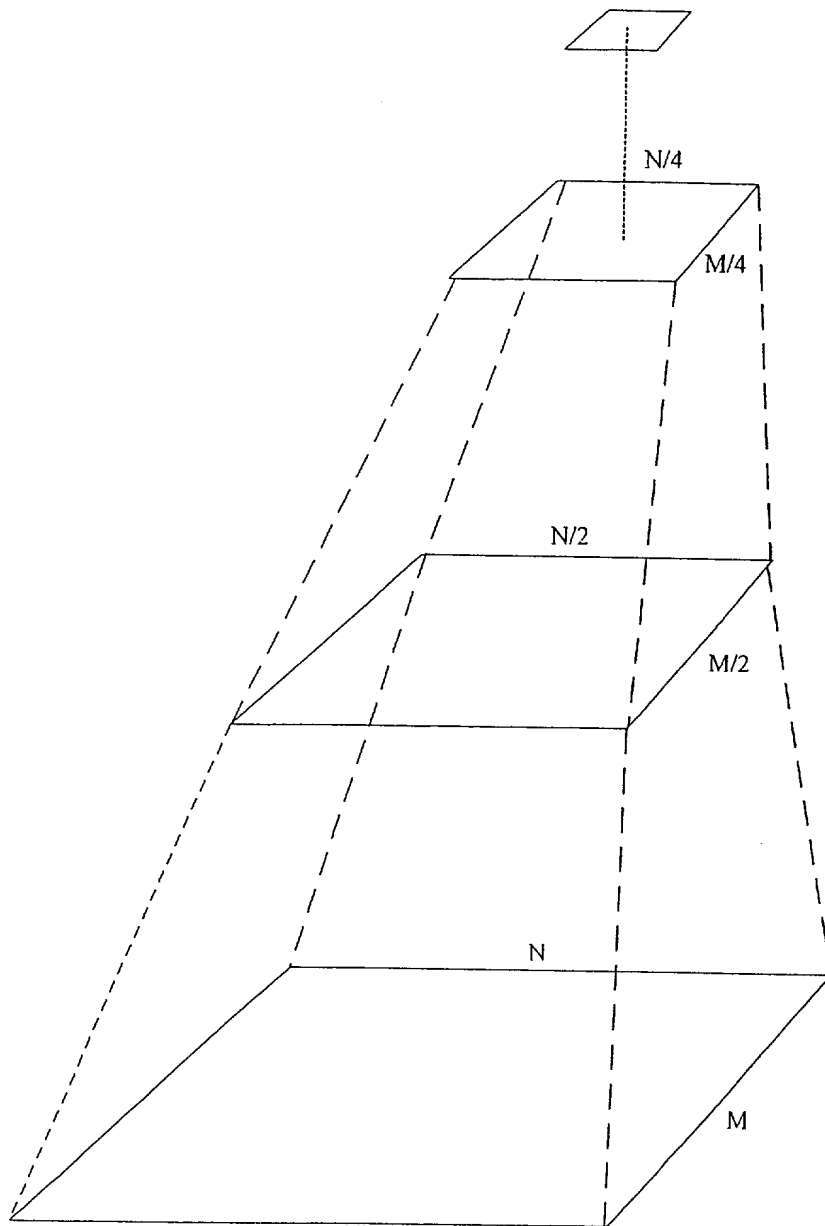
FIG. 8
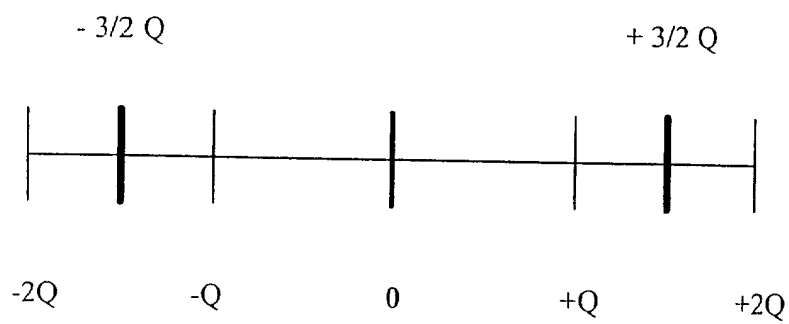
FIG. 9A
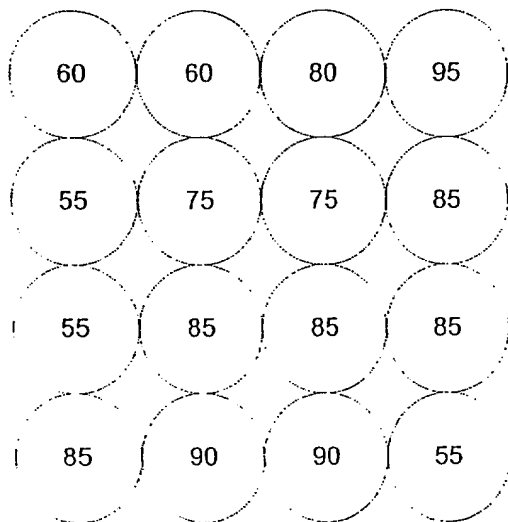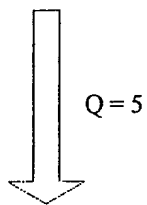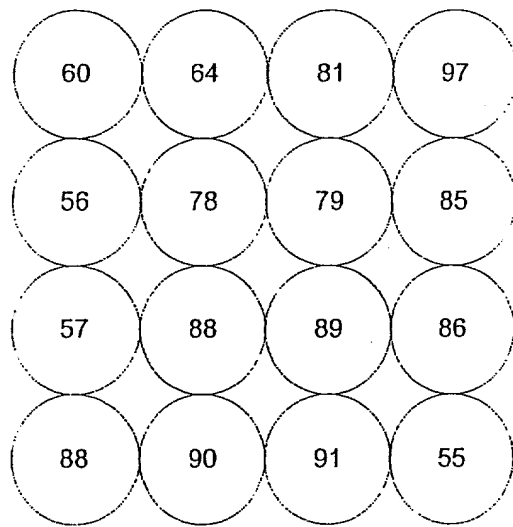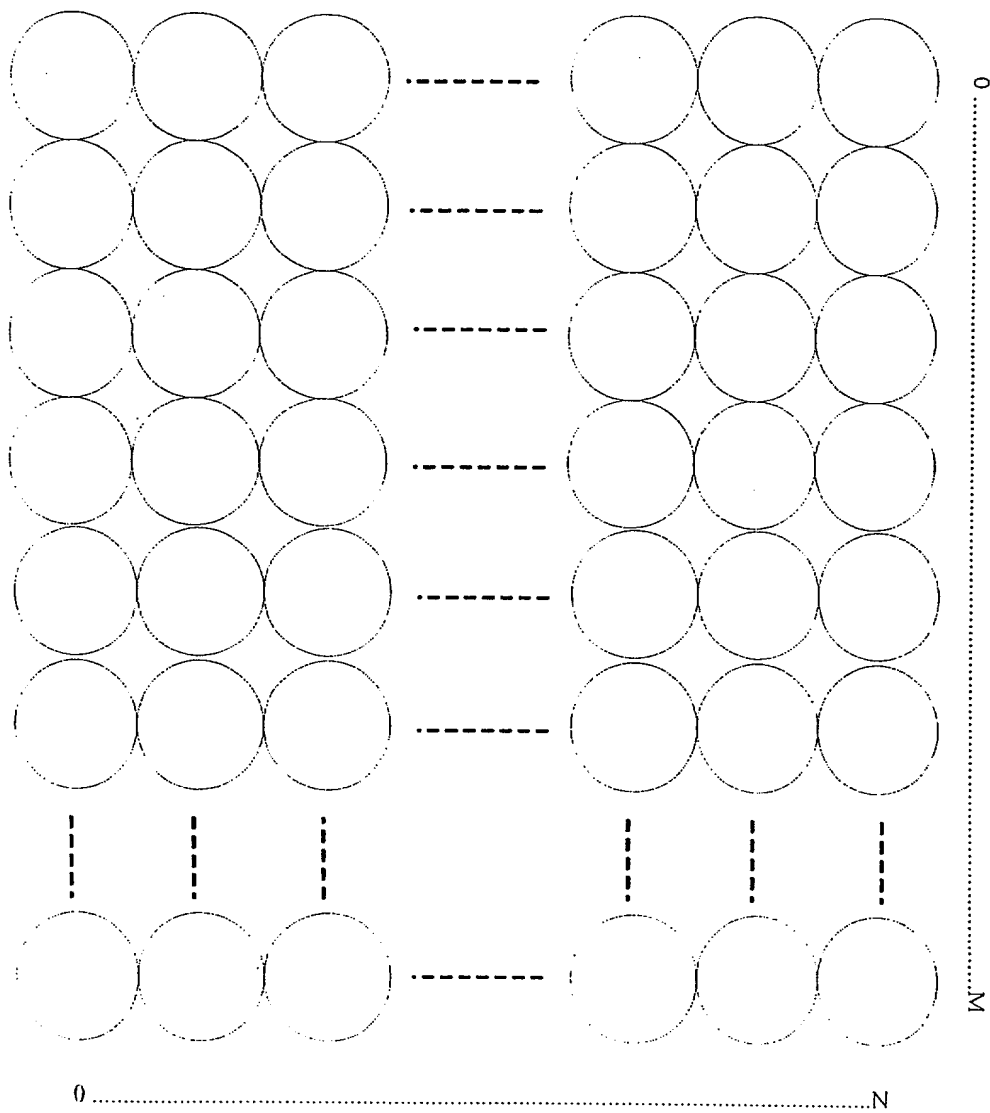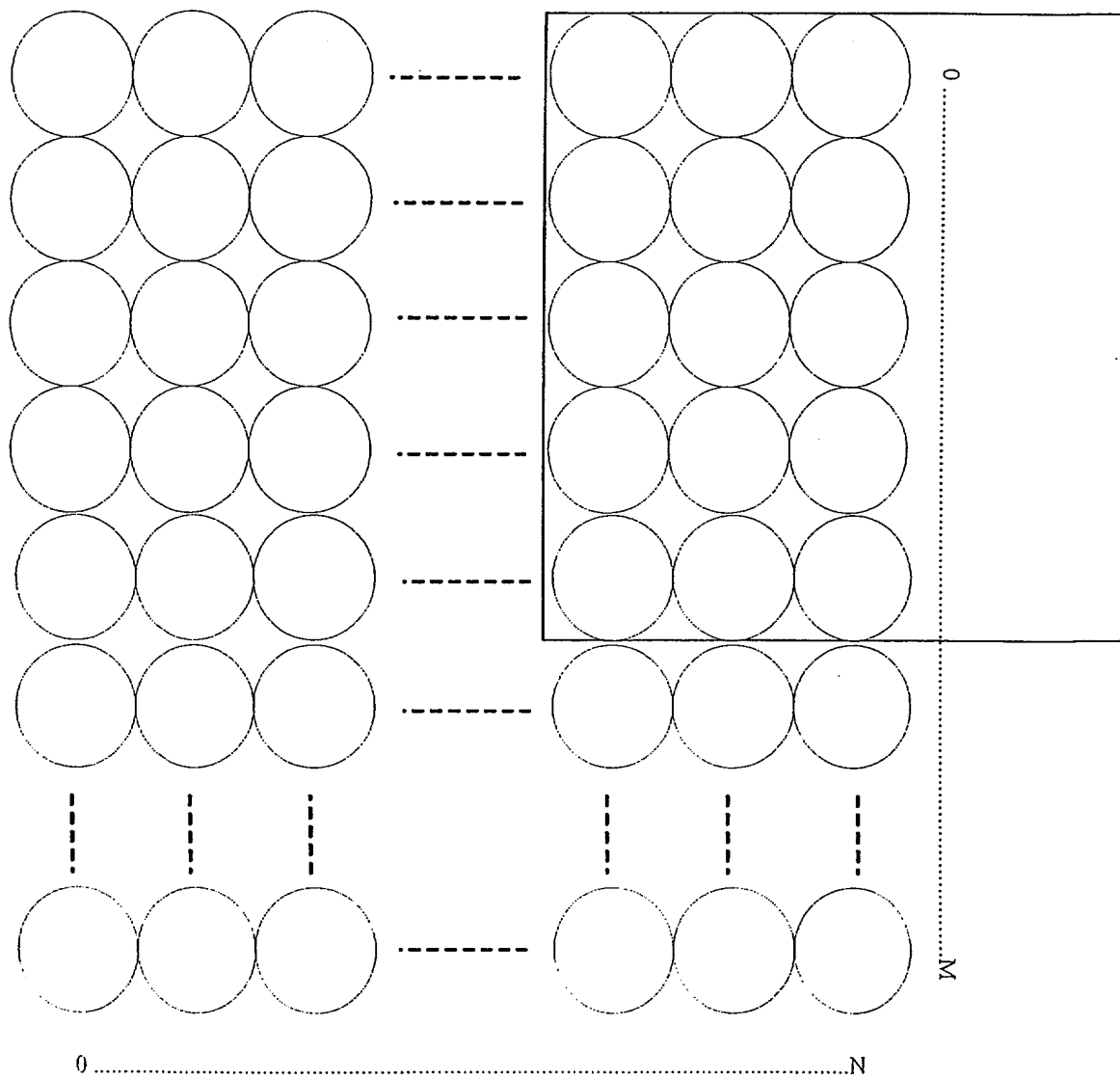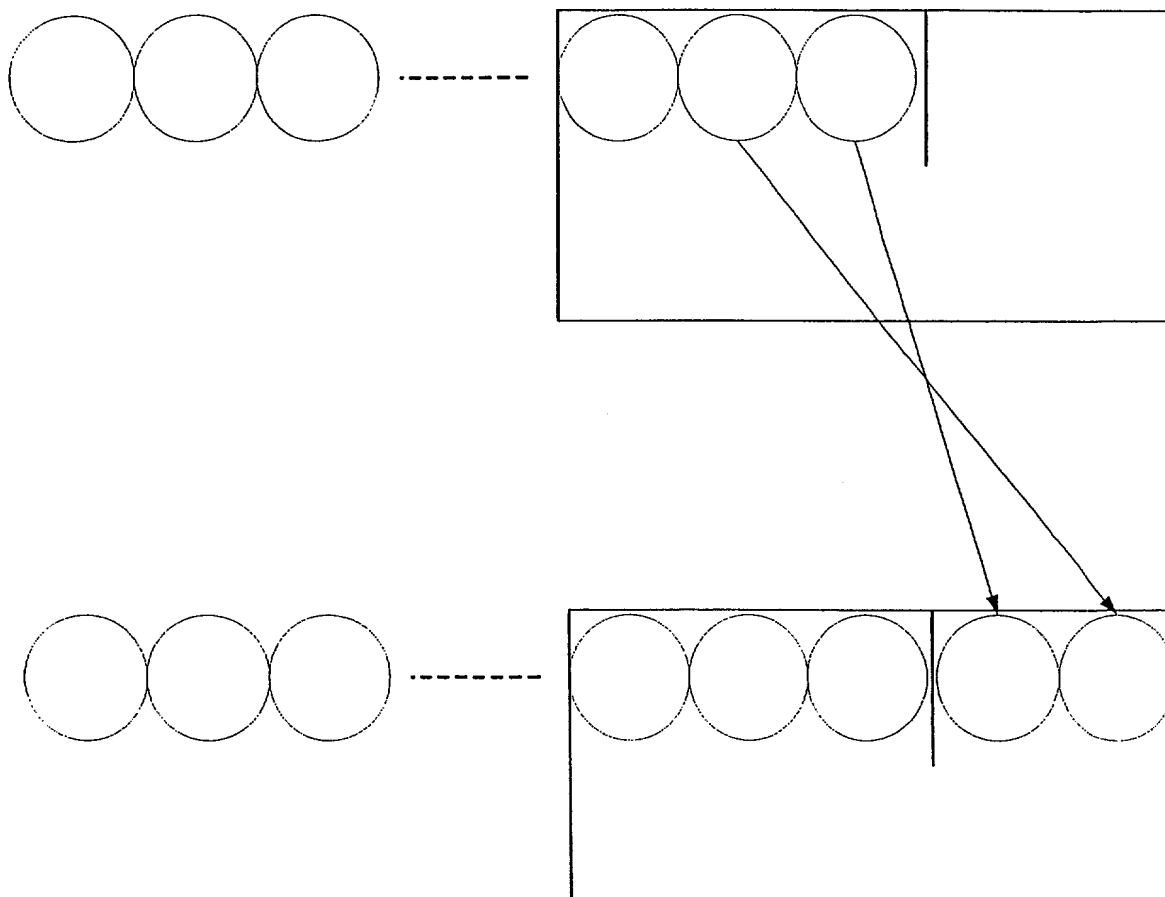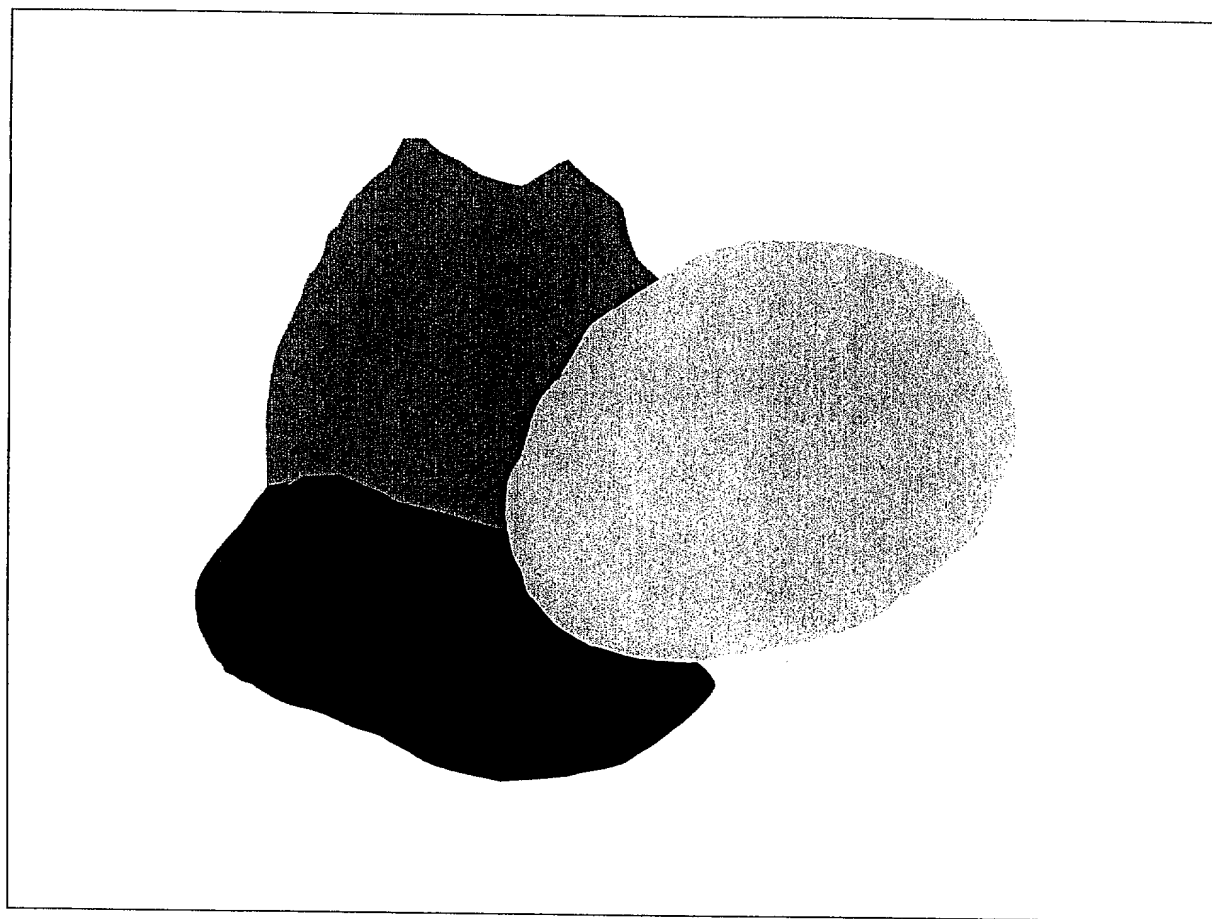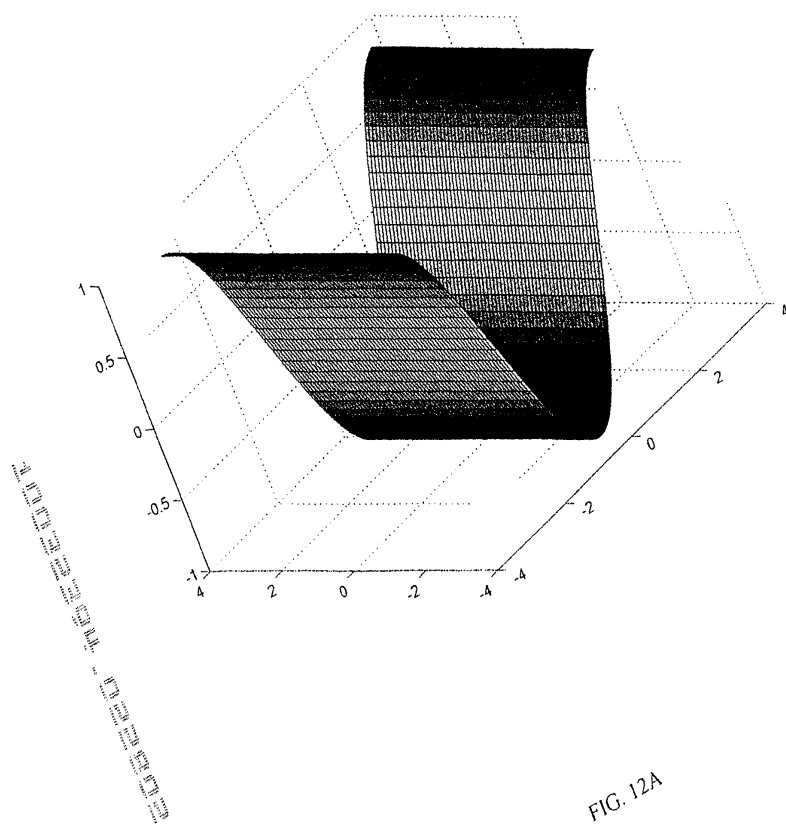
FIG. 9B

FIG. 10A

FIG. 10B

FIG. 10C

FIG. 11

FIG. 12A
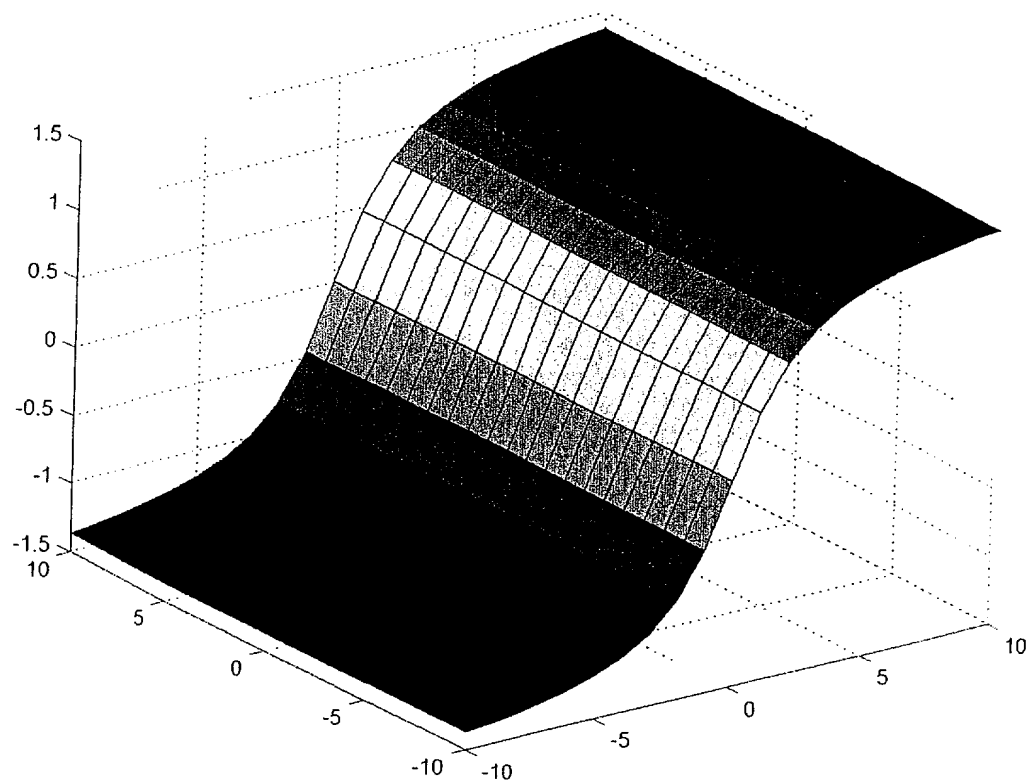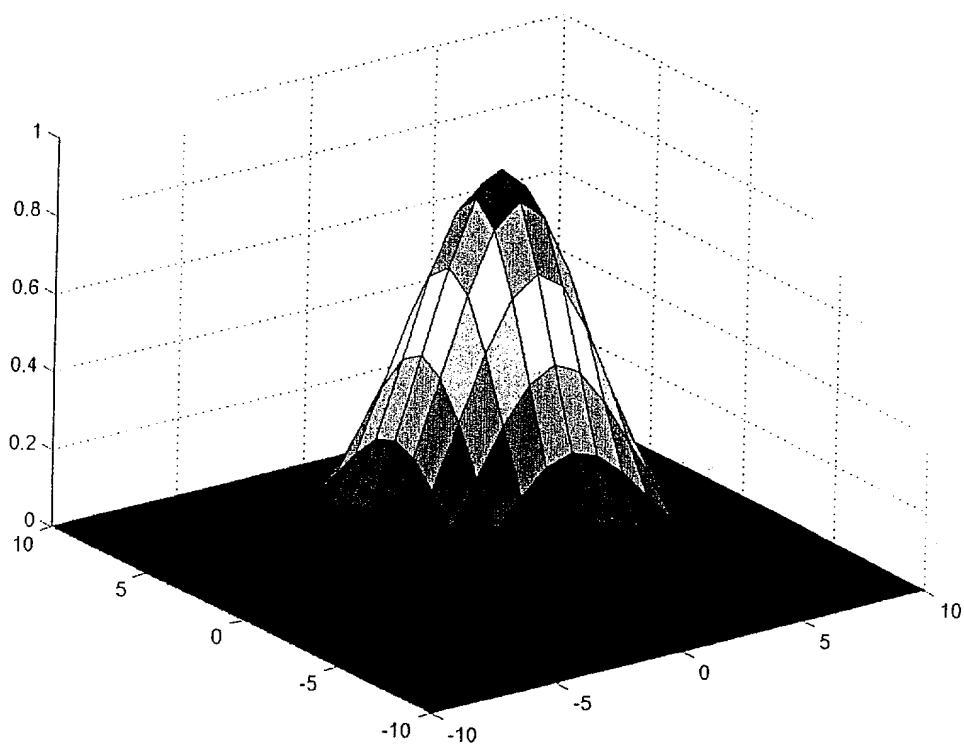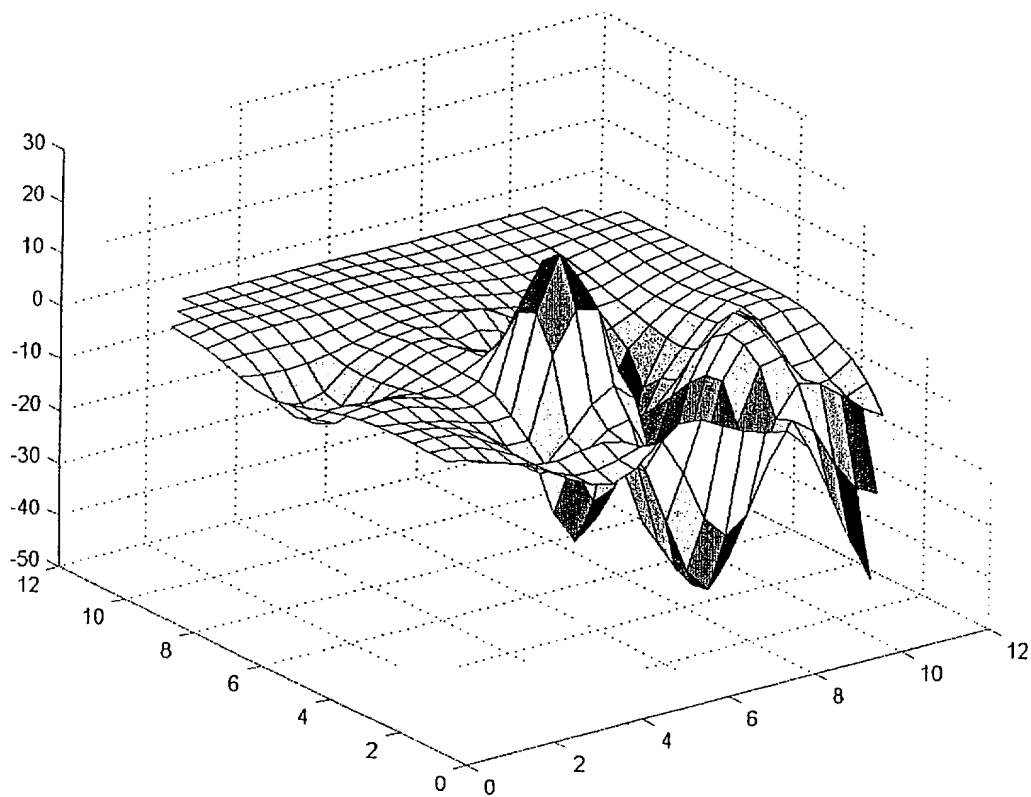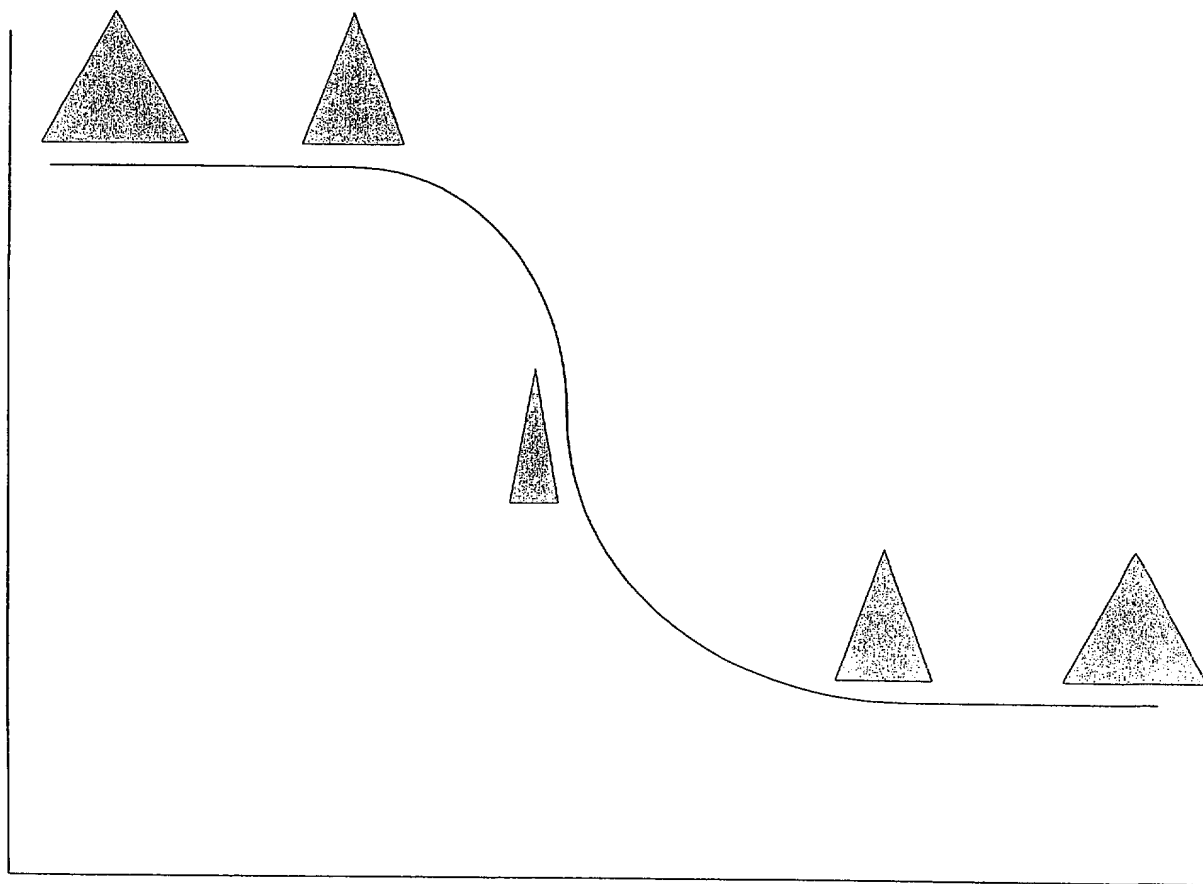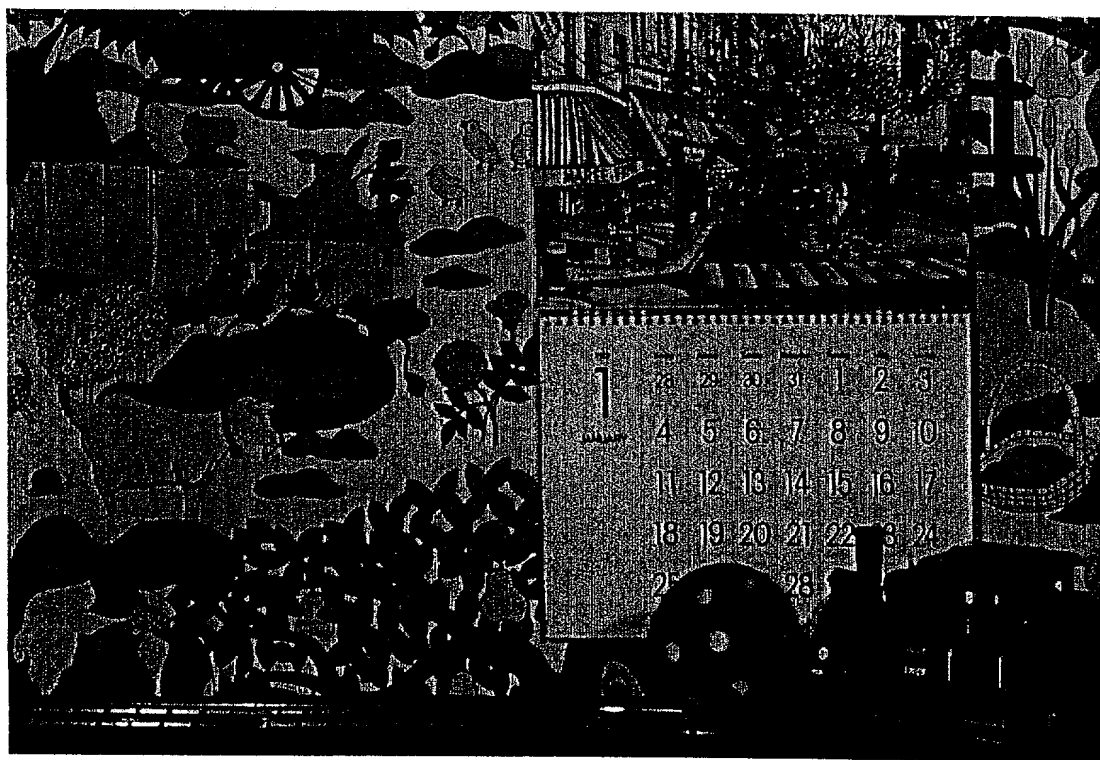
FIG. 12B

FIG. 12C

FIG. 12D

FIG. 13

FIG. 14 A
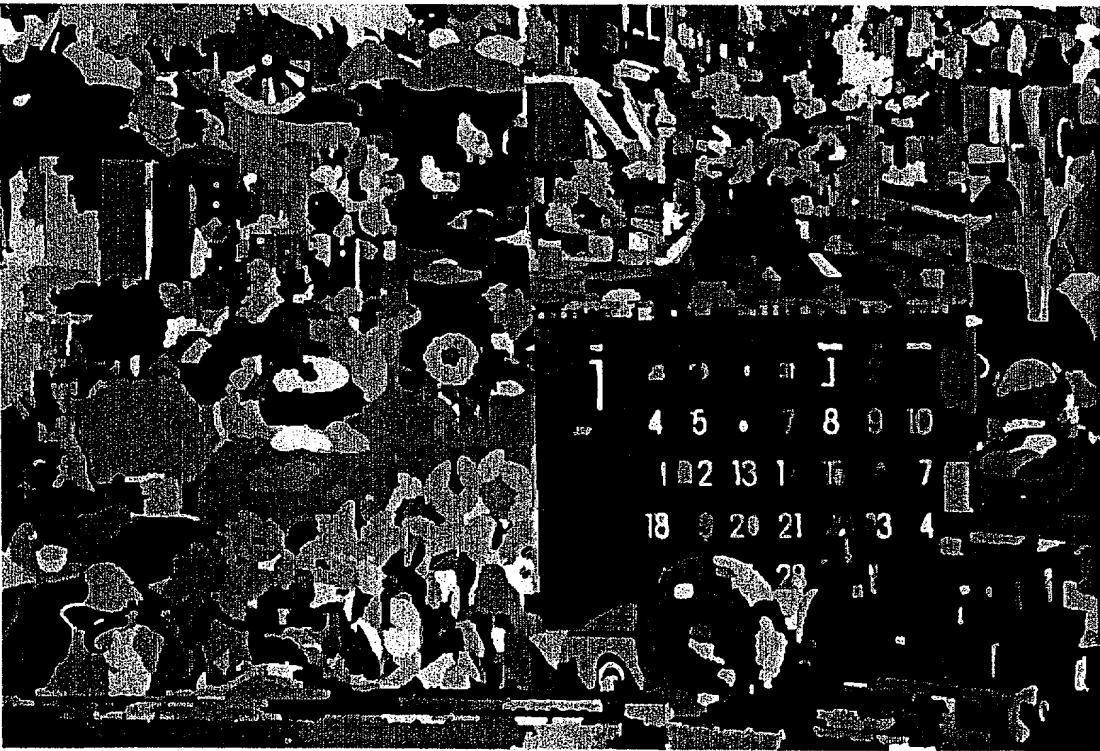
FIG. 14 B
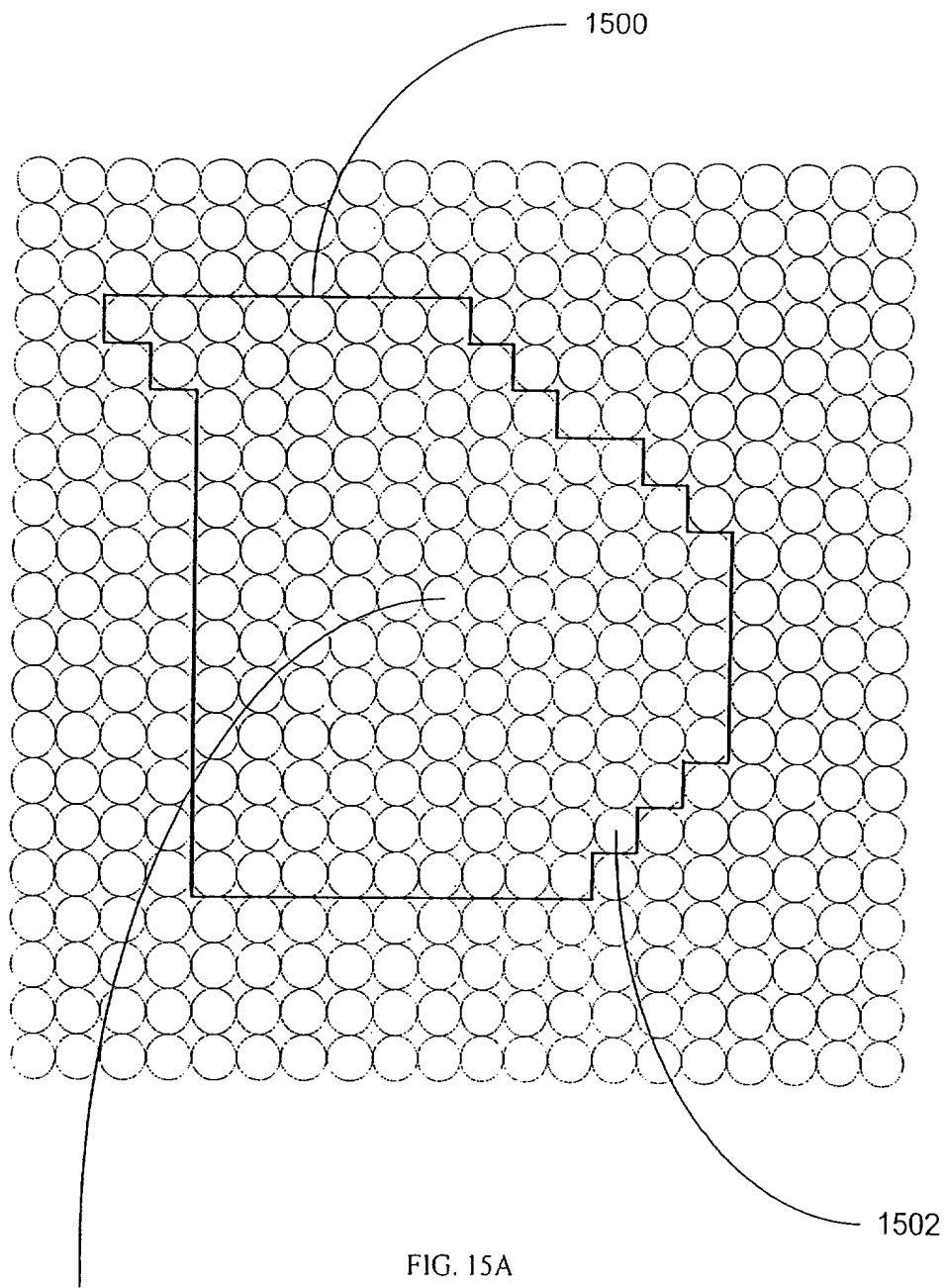
FIG. 15A

FIG. 15B

FIG. 15C

FIG. 16A

1602
1604
1606
1608
1610

1612
1614
1616
1618
1620
1622
1624
1626
1628

1650
1652
1654
1656
1658
1660

1670
1668
1666
1664
1662
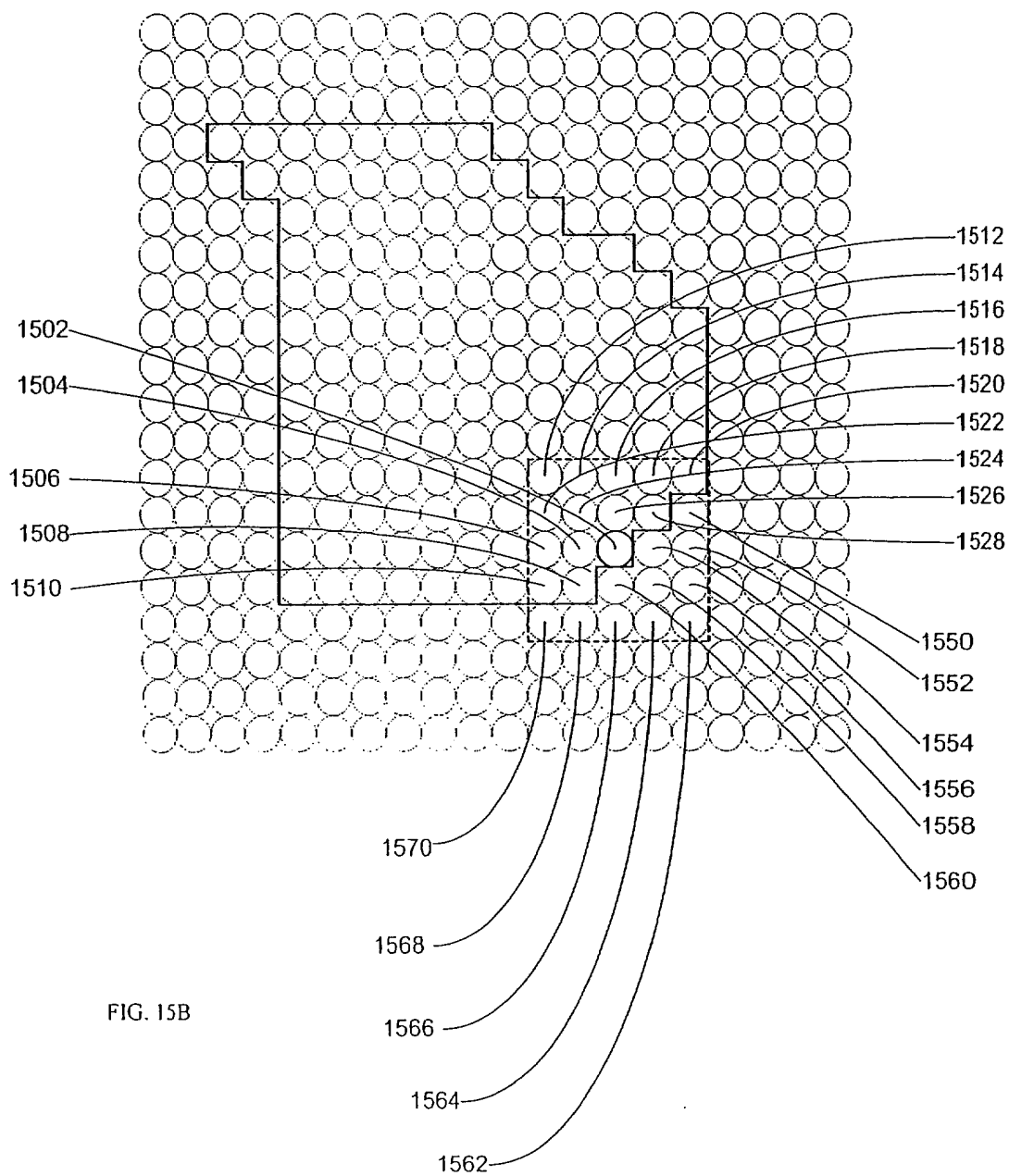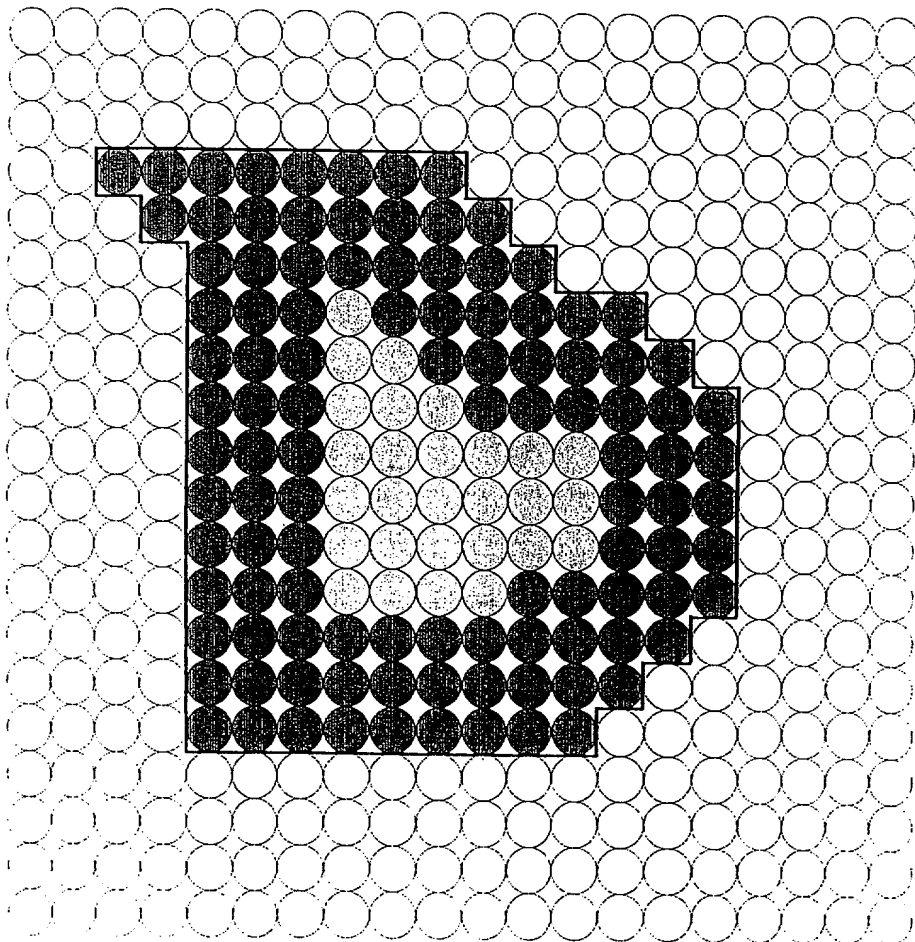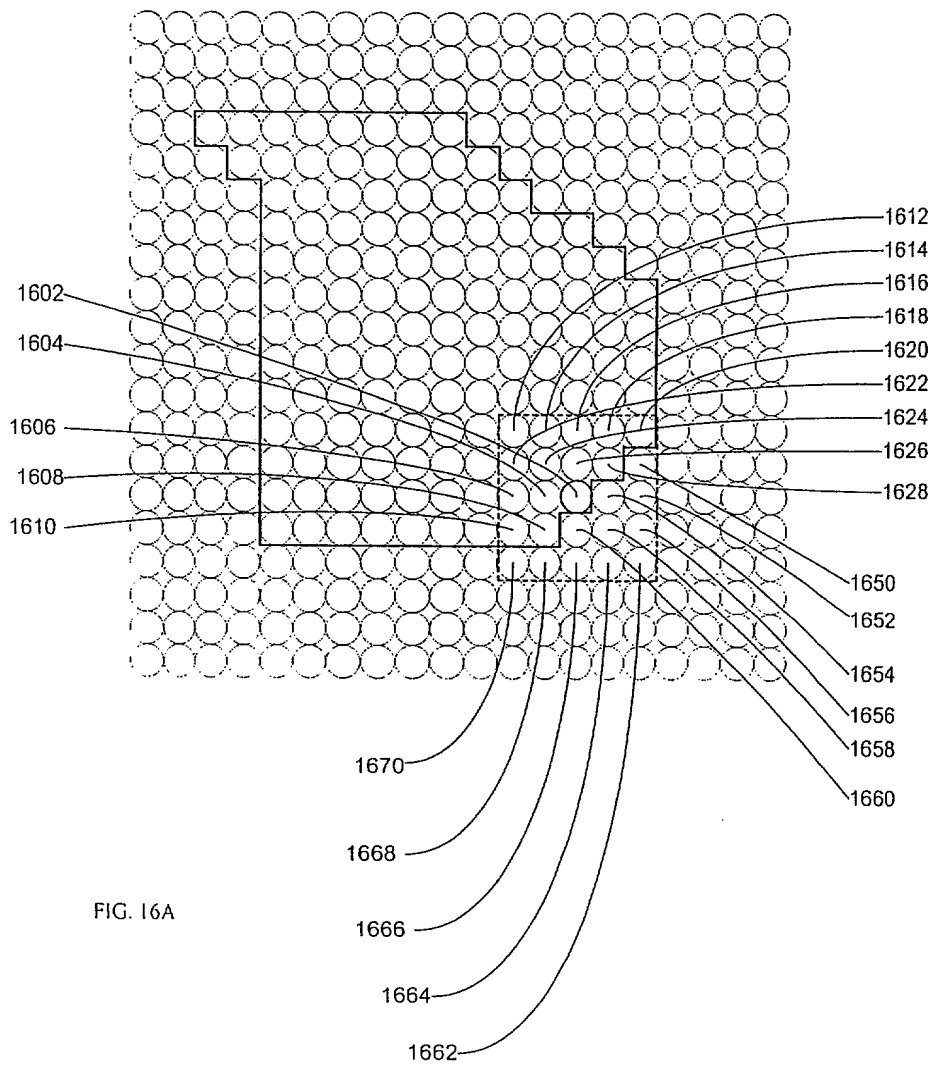
FIG. 16B

$$A = -1/32$$
$$B = 5/16$$

FIG. 16C

A = - 1/32
B = 5/16

X

Value of pixel ★ = 5/16 (15+15) - 1/32 (14+18+12+12) = 7.62

FIG. 16D

$$A = -1/32.$$
$$B = 5/16$$

Value of pixel* = 5/16 (15+15+66+65) - 1/32 (14+18+65+64+63+61+12+12) = 40.65

FIG. 16E

A = - 1/32
B = 5/16

Σ weights inside = 5/16 + 5/16 - 1/32 - 1/32 - 1/32 - 1/32 = 1/2 $\neq$ 1

Diff = 1 - 1/2 = 1/2

FIG. 16F
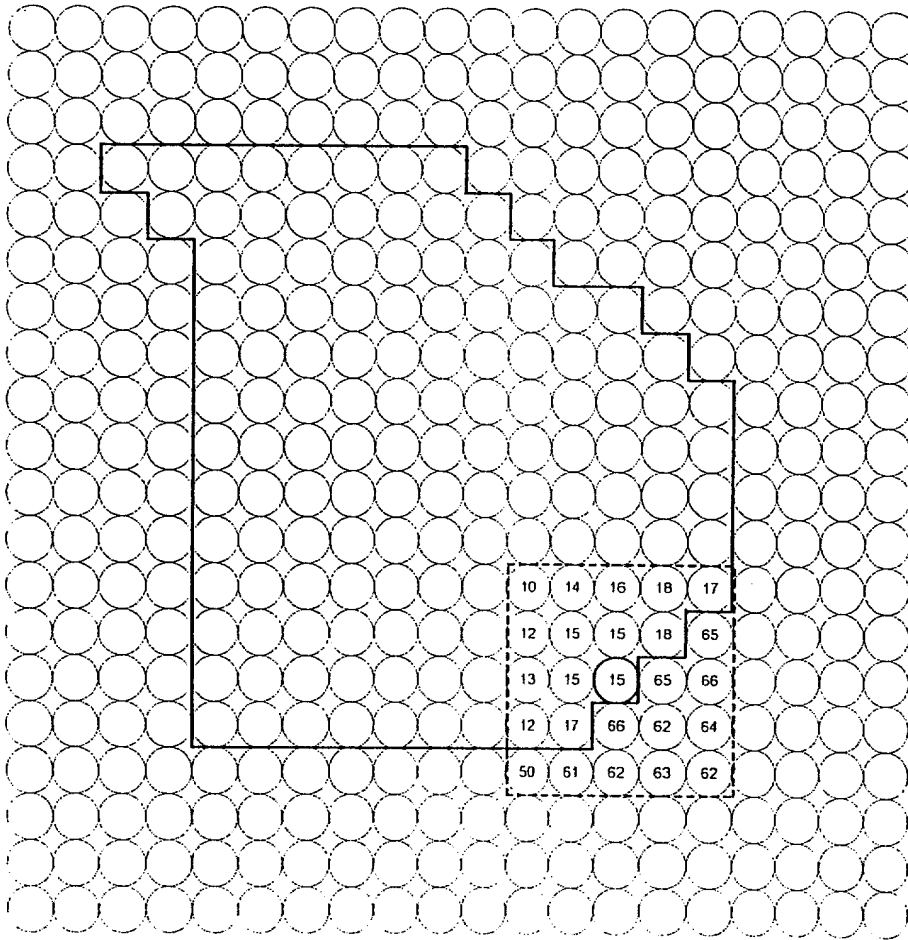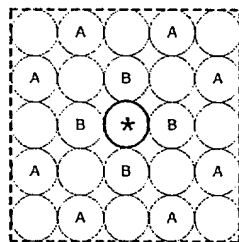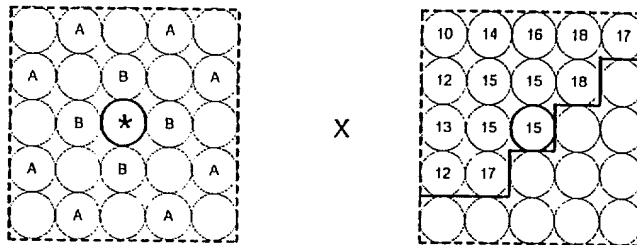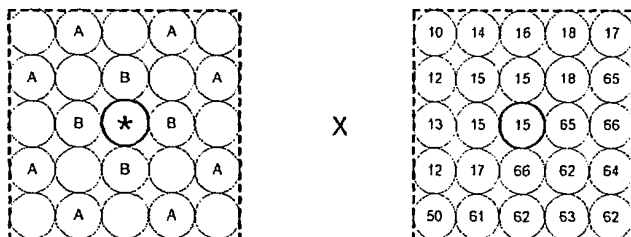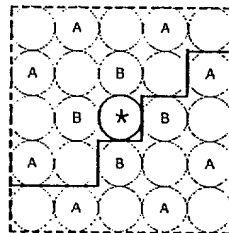
A = - 1/32
B = 5/16

A = - 1/32

B = 5/16

A		A
A	B	A
B	*	B
A	B	A
A		A

X

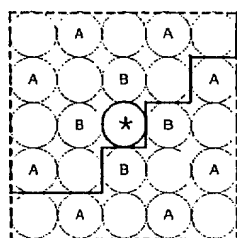| 10 | 14 | 16 | 18 | 17 |
12	15	15	18	
13	15	15		
12	17			

+

Replacement
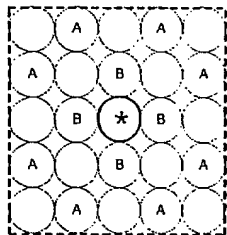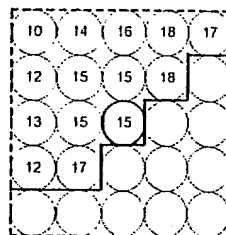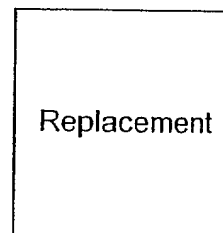
Equation of 16D + Diff * (Median inside the segment) =

7.62 + 1/2 (15) = 15.12

FIG. 16G

A = - 1/32
B = 5/16

X   =   F'

FIG. 16H

F' X
(grid of circles:
10 14 16 18 17
12 15 15 18 65
13 15 15 65 66
12 17 66 62 64
50 61 62 63 62)
+ Replacement
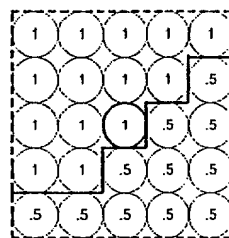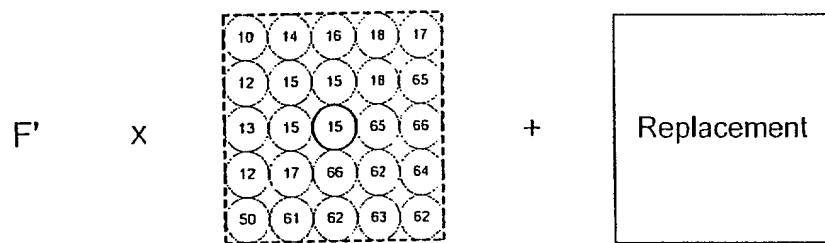
-1/32(14+18+12+12) + 5/16(15+15) + 1/2[-1/32(65+64+63+61) + 5/16(66+65)]+ 1/2(15) = 31.64

FIG. 16I

FIG. 17A

18	2	18	44
41	19	5	22
43	17		17
21	4	19	42

FIG. 17B

FIG. 17C